JUNE
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1960

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

UNIV MICROFILMS INC
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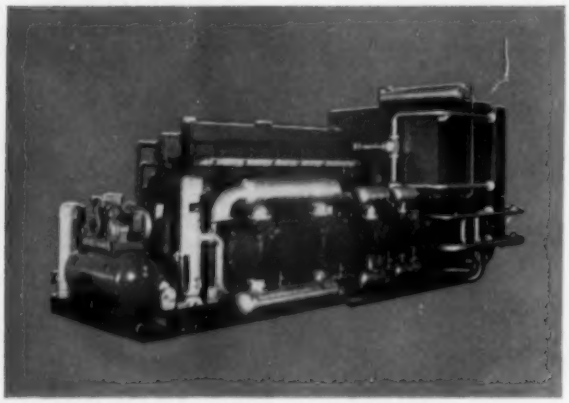
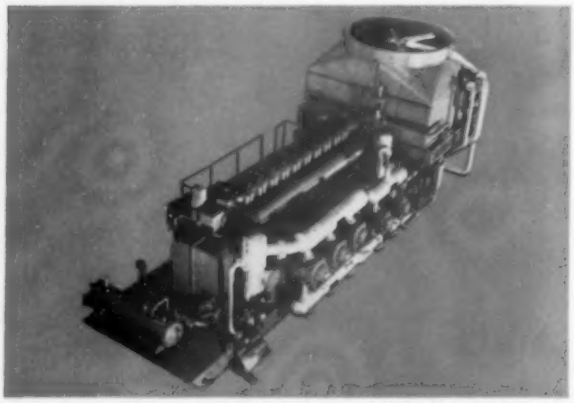
Southwest

DESIGNS, ENGINEERS, BUILDS AND INSTALLS PACKAGED COMPRESSOR PLANTS

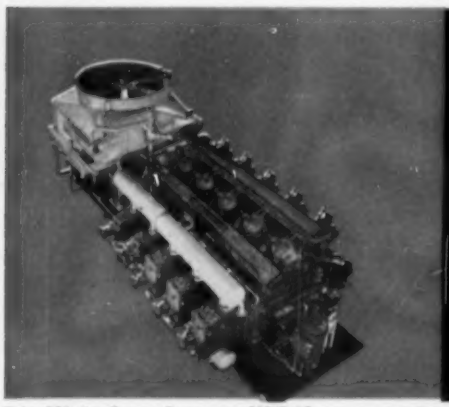
Using the Compressor You Select



A 660 hp Ingersoll-Rand 12-SVG-2 compressor packaged by Southwest Industries, is in gas injection service in West Texas.



A Clark HMAB-10 compressor packaged by Southwest for a major oil company is in service for gas sales boosting in South Louisiana.



This 660 hp Cooper-Bessemer GMXD-10 compressor has been packaged by Southwest for gas gathering service on an offshore platform in South Louisiana.

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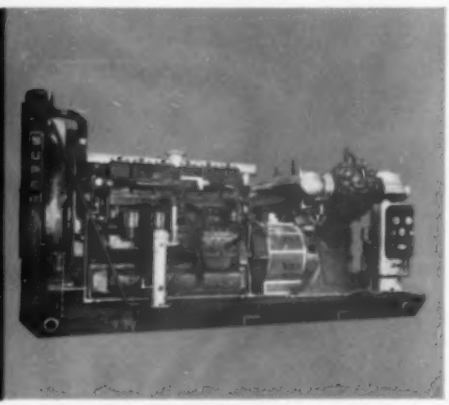
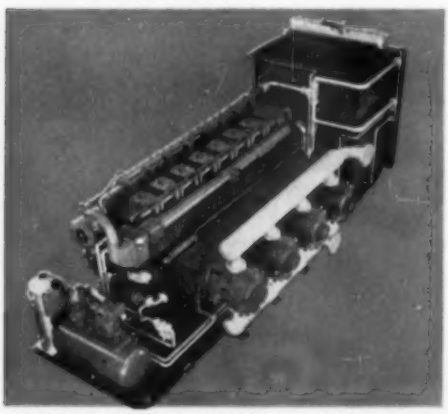


This 200 hp unit utilizing a Joy WB-12 compressor direct driven by a Superior 6G-510 Engine at 600 rpm was packaged by Southwest for propane service in a major oil company's gasoline plant.



This 750 hp Worthington SLHC-8 compressor in a Southwest Packaged Plant is being used by a major gas transmission company for pipeline boosting in East Texas.

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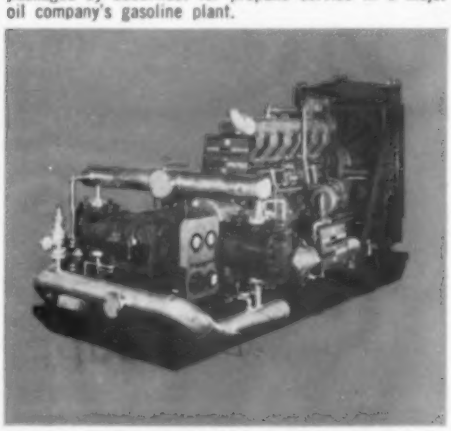

For a major gas transmission company, Southwest packaged this Ingersoll-Rand HHE-2 compressor with direct connection to a Waukesha LRORB Engine, operating at 1000 rpm and developing 250 hp.

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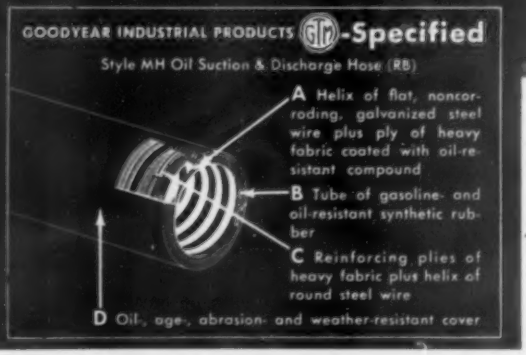
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PETROLEUM WEEK **JUNE 3, 1960**
Vol. 10, No. 22

Published weekly by McGraw-Hill Publishing Co., Inc. James H. McGraw (1860-1948), founder. Publication office: 871 N. Franklin St., Chicago 10, Ill. See panel below for directions regarding subscriptions or change of address.

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INSIDE *Slant*

MAYBE A JUNIOR API

Quite a few young oil men are disturbed over the fact that they are not being given a voice in petroleum industry affairs.

Granted, there has been an outward effort by various associations to draw more young men into their activities for some time.

But a recent swing along convention trail found the unrest among the younger oil men.

The younger generation of the industry admitted they had been appointed to various committees.

But in their opinion, being a member of a committee doesn't mean a voice. As one stated:

"Sure they let us say a few things, but they pay no attention to what we are saying at all. The oldtimers are still runing things."

The qualities of leadership among the young men certainly cannot be developed if they virtually are slapped down every time they open their mouths.

A few such embarrassments retard rather than develop the leadership qualities so essential to the oil industry.

Why not a junior API for the young men in order that they may fully express their thoughts without fear of embarrassment?

LeRoy Menzing
Editor

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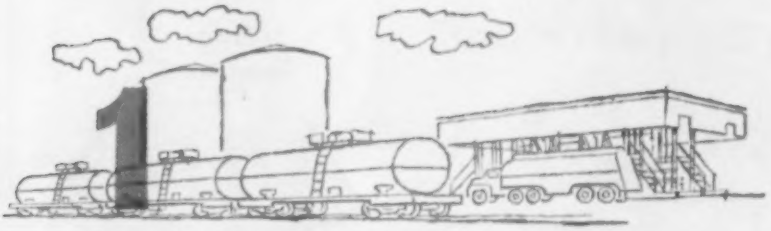

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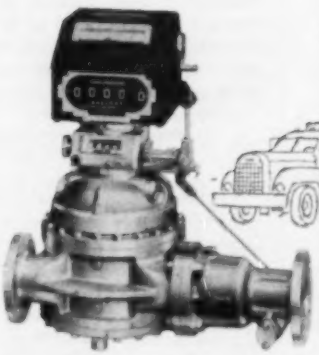
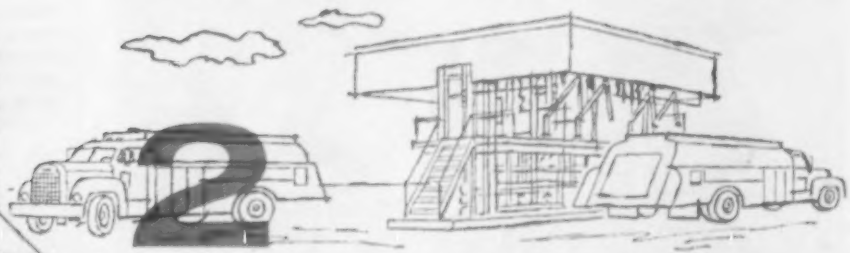
It's just as important to know the "ins" as the "outs." Smith-Erie "S" meters record every drop of product received . . . head off unexplained losses right from the start.





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You speed up loading and delivery time when you fill and measure trucks the Smith-Erie meter way — every gallon permanently accounted for. And for the ultimate in round-the-clock loading, investigate Smith-Erie key-stop totalizers.

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Congrats and $25 to Mr. D. J. SUGGS, Republic Natural Gas Co., Tipton Bldg., Pauls Valley, Okla., for this quip.

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DEPT/Opinions

Views That

"The petroleum industry is going through a period of readjustment, to be sure. It is well to remind ourselves, however, that this is far from being the first such experience the industry has had—nor is it likely to be the last. Measured by any standard that I'm aware of, the long-term outlook for the industry remains very good."

—ALBERT L. NICKERSON
President
Socony Mobil Oil Co.

"Temporary shortages of fuel oil could occur [on the East Coast] if controls do not permit sufficient volumes of foreign fuel oil to meet all demand. And because of the political pressures involved, there is no certainty that imports will be sufficient at all times to fulfill requirements."

—W. A. MCAFEE
General manager, wholesale sales
Standard Oil Co. of California

"If the thorny residual fuel problem is to be resolved, or at least eased, the factors which cause it will first need to be understood fully by all segments of the industry and the various government agencies involved."

—JOHN G. WINGER
Petroleum economist
Chase Manhattan Bank

"From the reports available to us it appears that the Russians are far ahead of us in the interpretation of ground water and soil data. And it may be time for us to take another look at the possibility of obtaining useful information from these readily available data."

—H. A. GORRELL
Geologist
J. C. Sproule & Associates
Calgary

"Where will our energy come from in 2059? Much of it will be coming from the same sources it is coming from today. Coal and petroleum will continue to supply the major portion of the world's energy demands until well into the early part of the 21st century."

—L. G. WEEKS
Retired chief geologist
Standard Oil Co. (N.J.)

"There are increasing indications that the industry is cognizant of the importance of paring down excess capacity and of adapting itself to the decelerated rate of future growth. These signs include vigorous self-appraisals in the form of economy programs designed to utilize people

Make News . . .

more effectively and achieve greater efficiency through internal consolidation, attempted merger of companies, increasing diversification into chemicals, and moves into foreign production and markets."

—A. A. Buzzi
Vice-president, finance
Shell Oil Co.

"It seems to me that the need for mutual understanding and trust between government and business has never been more urgent than it is today."

—Fred W. Bartlett
Chairman
Socony Mobil Oil Co.

"We are in the process of streamlining our transport truck delivery system, where costs have increased. Transport truck units, for instance, cost $20,000 or more. We have devised a method, which we are now testing, where one truck will take the place of three or four, cutting down not only the capital costs, but also the operating expenses. This plan will enable a truck to make deliveries round the clock."

—Leo Hoar
Vice-president, director of marketing
Sinclair Refining Co.

. . . and Letters

Dear Sir:

I noticed in your "What's New in the Industry" [PW—May13'60,p18] an article that stated that Phillips and American Independent were working on a refinery deal in Vietnam. This news release is certainly not true with reference to American Independent Oil Co., as we have no negotiations or plans in connection with any refinery in that area of the world.

D. C. Dunaway
President
American Independent Oil Co.

• Petroleum Week regrets the error. It was based on information from the International Cooperation Administration in Washington.

Petroleum Week *will publish each week comments from readers on timely, pertinent subjects. Such expressions are welcome.*

Address all such correspondence to LeRoy Menzing, Editor, Petroleum Week, *330 W. 42nd St., New York 36, N.Y.*

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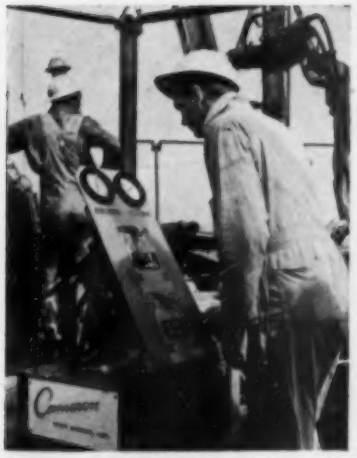
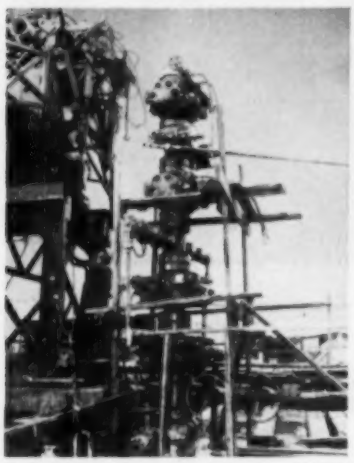
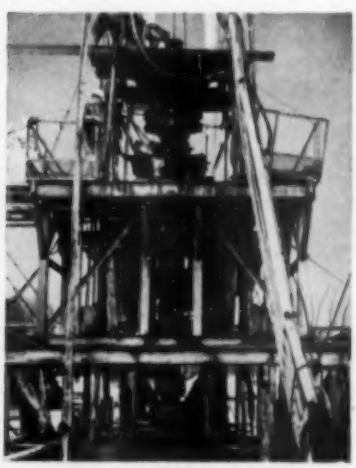


Cameron controls safeguarded this tricky re-work operation — sanding was encountered at 13,500 ft. and the production string had to be pulled. A surface pressure of 8,700 psi was safely held in check.



This stack of Cameron preventers helped regain control after a blowout occurred while coming out of the hole.



This well caught fire, after a casing failure, fortunately bridged and extinguished itself — once again under control it required extensive re-work before drilling could continue.

WILL WE ALWAYS HAVE WILD WELLS?

As long as there are high pressures to be handled there will be potential hazards. But there is constant progress to make drilling in pressure zones a safer, more economical operation.

Cameron Drilling Controls have a two-fold purpose. First to give the most reliable protection while making hole — and second to regain control if disaster strikes.

To your left are three recent cases in which lost control was regained or maintained while re-working, because the operators knew they could Count on Cameron during this demanding procedure.

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60-Second Summary / WHAT'S HAPPENING IN OIL

June 3, 1960

dept/INDEX

Production	25
Pipelines	47
Processing	42
Marketing	40
Washington	22
Statistics	51
The Market Trend	52
Key Prices	53
Editorial	60
International	54
Personals	57
Service & Equipment	58

A widely split Supreme Court ruling on ownership of submerged land in the Gulf of Mexico may pave the way for more litigation. The court held that the boundaries of Texas and Florida extend three marine leagues, or 10.45 mi., from shore. But it limited the boundaries of Louisiana, Mississippi, and Alabama to three miles. . . . p. 19

•

The construction industry is using close to one-fourth of the plastics being produced currently. But petrochemical makers feel they've hardly scratched the surface of the potential construction market. . . . p. 43

•

Many producers want the Texas Railroad Commission to consider prorating all exempt production, rather than possibly just waterfloods and pressure maintenance projects. Their arguments are that such proration would not affect very much of the total exempt allowable, and that it might endanger recovery of oil. . . . p. 15

•

A fracturing program is turning a noncommercial South Texas field into a success. Wells that averaged 6 b/d can now produce 50 b/d or more on a sustained basis. . . . p. 33

•

A Canadian company wants to start commercial production of the Athabasca tar sands. It has asked the Alberta Oil & Gas Conservation Board for approval. . . . p. 25

•

Gulf Oil Corp. will probably be the first to start wildcatting in the Spanish Sahara. Its target date is shortly after the middle of July. . . . p. 55

•

The wide-area pricing plan that Mobil Oil Co. used in the Northeast is getting another test in the Pacific Northwest. The plan eliminates tank-wagon allowances, and puts all dealers in a wide area in the same price bracket. . . . p. 40

•

Residual fuel oil prices have oil men wondering if there isn't a loophole in the law of supply and demand. Heavy fuel supplies are tight, yet prices are weak. . . . p. 52

•

Soviet crude is being used by the Cuban government to tighten its squeeze play on international majors. It would displace Venezuelan oil, with the government pressing Shell, Esso, and Texaco, to process up to 10,000 b/d each in their Cuban plants. . . . p. 54

•

Aluminum is a better anticorrosion metal than some refiners believe it to be. Ten years of experimentation leads one refiner to conclude that it's superior to brass or alloy steels in certain locations. . . . p. 42

Up to the Minute / SIGNIFICANT LATE NEWS

June 3, 1960

Import allocations for the period starting July 1 will average 155,548 b/d below the first half. The total for the U.S. set by the Interior Dept. at mid-week will average 1,372,255 b/d, with all of the cutback being made east of the Rockies. The total figure will be raised after September when the last-quarter residual fuel oil imports are set.

- Crude and unfinished oil quotas in Districts I-IV will average 694,328 b/d in the July-December period, compared with 718,087 b/d now.
- Light products east of the Rockies will average 76,634 b/d, compared with 76,631 b/d now.
- Residual fuel oil import allocations will be 250,000 b/d east of the Rockies for the July-September quarter. That compares with 332,427 b/d that Interior officials say were available for importation in the three months ending June 30. The amended allocation for the first six months averaged 491,000 b/d.
- On the West Coast, the crude and unfinished allocation will run 263,303 b/d, up from 220,095 b/d in the first half. The light products allocation in District V will average 6,753 b/d, unchanged from the first half. Puerto Rico's quota is unchanged at 81,237 b/d.

•

Further debate on offshore mineral rights—at least off the coast of Louisiana—probably will come before Congress and the Supreme Court. This week's High Court ruling (page 19) is expected to result in introduction of legislation by Louisiana congressmen to upset the three-nautical-mile limit placed on Louisiana's rights.

The Supreme Court has yet to decide where the coastline lies along the Gulf of Mexico. That decision probably will come after lengthy hearings by a special master appointed by the court.

It all means that a final settlement between the U.S. and Louisiana may be years away. Nearly all of the $308.4-million now being held in escrow may continue to be held. All but a few of the 1,564 oil and gas wells beyond the three-mile limit are off the Louisiana coast, where cumulative production since 1955 totals 112.9-million bbl. of oil and 790-trillion cu. ft. of gas.

•

Federal Power Commissioner William R. Connole will leave when his term expires June 22, despite attempts to keep him in office. He made his decision this week even though House Democrats are seeking approval of a Senate-passed bill that would have the effect of keeping Connole in office until a successor is confirmed by the Senate.

•

A third manufacturer will enter the tetraethyl lead and tetramethyl lead field. Philadelphia & Reading Corp. and Chatham Chemical Corp. have formed Chatham-Reading Chemical Corp., whose subsidiary, Houston Chemical Corp., is building plants at Beaumont, Tex. In addition to gasoline additives, the company will make ethylene oxide. Ethyl Corp. and E. I. du Pont de Nemours & Co. are the only present TEL and TML producers.

The wide range of physical properties available in Eastman's series of low-molecular-weight Epolene resins provides formulating flexibility never before possible. With the addition of three new resins (Epolene LVE, HDE and HD), you can now choose from among seven different types to improve your wax formulations or to develop new ones.

Epolene polyethylene improves the properties of paraffin blends in these ways:

- reduces flaking
- increases toughness
- increases abrasion resistance
- improves adhesion
- improves resistance to thermal shock
- increases mileage
- raises blocking temperature
- improves gloss

Each type of Epolene polyethylene contributes, to a greater or lesser degree, to the improvement of each of these properties. Thus, through selective blending, you can formulate waxes of optimum performance for your equipment and service.

New and expanded production facilities at Longview, Texas, assure the immediate availability of all Epolene resins.

Epolene E *oxidized* • In general, the oxidized Epolene resins improve the adhesion of paraffin blends to a greater degree than do the non-oxidized types. Among the oxidized types, Epolene E is superior in this respect, and in its ability to increase the softening point of paraffin blends.

Epolene LVE *oxidized* • When good adhesion and a low cloud point are important, Epolene LVE should be considered as a component in paraffin blends.

Epolene HDE *oxidized* • This is the first high-density, oxidized low-molecular-weight polyethylene available. Epolene HDE is suggested for use in wax blends that must exhibit good adhesion and mileage.

Epolene N *non-oxidized* • Epolene N contributes maximum hardness and high tensile strength to paraffin blends. It also enables coaters to obtain excellent mileage.

Epolene LV *non-oxidized* • Epolene LV is one of the easiest to handle among the low-molecular-weight polyethylene resins, because of its low melt viscosity. Paraffin blends containing Epolene LV also exhibit low viscosities at application temperatures, and relatively low cloud points.

Epolene HD *non-oxidized* • Epolene HD is the hardest of all the low-molecular-weight polyethylene resins, yet is easy to handle due to its low melt viscosity. It produces paraffin blends that have high softening and blocking temperatures.

Epolene C *non-oxidized* • Epolene C, a unique polyethylene resin, has the highest molecular weight and lowest density of all the resins in the Epolene series. Contributing maximum tensile strength in conventional blends, Epolene C is also being used to advantage in contings in which it is the principal component.

If you are using low-molecular-weight polyethylenes in your wax formulations, or are considering their use, investigate the complete Epolene series. Your Eastman representative will gladly explain the advantages of each of the resins in the series and will show you how to realize the most profitable use of them in your formulations. Write today for more information.

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Eastman now offers paraffin formulators 7 basic types of polyethylene

New Epolene resins broaden formulation range of paraffin waxes

Physical Properties of 2% EPOLENE-Paraffin Blends
(130° AMP Paraffin)

PROPERTY	EPOLENE TYPE E	LVE	HDE	N	LV	HD	C
Density*	0.938	0.939	0.956	0.928	0.925	0.938	0.907
Viscosity, cps.	4.8	5.5	5	5.2	4.3	5.4	5.2
Ring and Ball Softening Point, °F.	145	138	140	140	140	145	139
Penetration Hardness, 0.1mm.	15	11	11.5	15.6	13.9	13.9	13.3
Adhesion, Psi.	13.5	13.5	11	8	8.5	5.5	10.5
Cloud Point, °F.	174	165	183	185	176	190	170
Consumption, G./100 in.²	3.79	4.49	3.29	3.69	3.86	4.71	4.32
Tensile, Psi.	455	435	280	470	465	355	470

*Density of unblended Epolene

Epolene®

EASTMAN low-molecular-weight polyethylene resins

Have you met Ethyl's Mike Remondino?

Research Representative in the Eastern Region

IF YOU haven't yet, you'll like him when you do. Mike's a pleasant fellow with an impressive knowledge of fuels and engines that's unusual—even at Ethyl. It's no wonder he's such a welcome visitor at oil company offices and laboratories.

Mike is a "Rover Boy," in Ethyl parlance—one of the experienced engineers headquartered at Ethyl's Detroit laboratory who serve as liaison between the lab and the petroleum industry. His job, and that of his counterparts, is to bring results of Ethyl's research programs to the oil companies—and bring back the fuel-engine problems of the industry.

Remondino knows his business. He joined Ethyl 27 years ago during his University of Detroit Cooperative Engineering course. After graduation, Mike's duties included road testing and chassis dynamometer work in California.

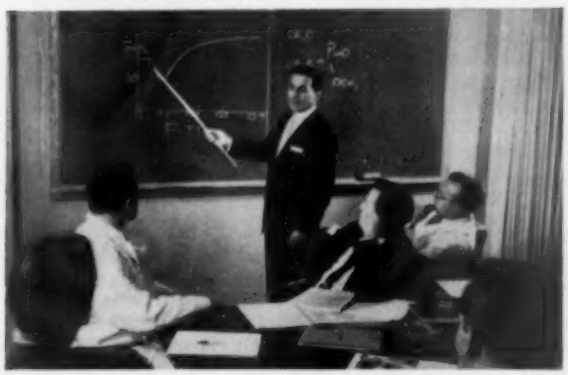
During the war he supervised an aircraft engine development program in Detroit. As other assignments followed—commercial vehicle field problems, fuel technology, instrumentation, just to name a few—Mike became ideally suited for his present responsibility.

Ethyl Research Representatives are a most important communicating link between the Petroleum Industry and Ethyl—typifying our belief that service is just as important as product.

1. One of Mike's most important activities is to bring new technical information to oil company research people. Here, he presents the most recent data on the Road bonus in octane quality achieved by the use of "Ethyl" Antiknock Compound in today's gasolines.

2. To give an oil company a specific check on the anti-icing action of "Ethyl" Multi-Purpose Additive in their gasolines, Mike arranged this special test. Resultant data will determine the effectiveness of the additive in the customer's fuels under a wide range of operating conditions.

3. Comparing Ethyl's results with those of an oil company, Mike discusses a test program on small car engines with a customer laboratory supervisor. Ethyl's broad fuel-engine experience is often helpful in this way in the evaluation of the customer's own data.



4. The advantages of Ethyl's new phosphorus additive, ICC 4, are explained by Remondino to a customer technical group. This exclusive Ethyl product offers refiners the lowest cost phosphorus protection for their gasolines in controlling spark plug fouling, surface ignition and rumble.

5. Ethyl installed this unique equipment to add precision to engine evaluation of petroleum products. It makes possible complete control of atmospheric conditions, including barometric pressure. Mike is shown checking on a special study of octane requirement he initiated for an oil company.

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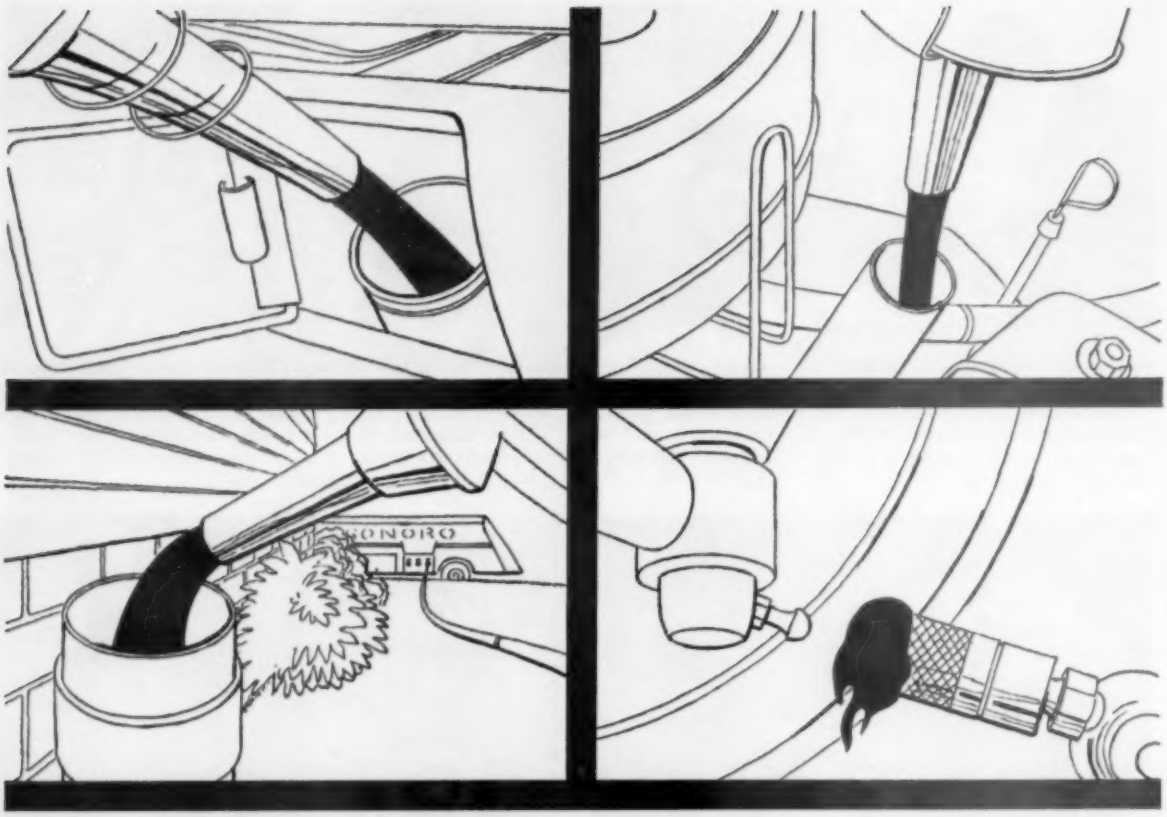

RAINBOW FOR SALE... with new finer-flaked Du Pont dyes

Du Pont petroleum dyes provide sales appeal for your products more efficiently than ever before

Because flaked dyes are virtually dust-free, they are constantly gaining in popularity. Today they're becoming the standard material for dyeing gasoline as well as adding sales appeal to other petroleum products—kerosine, home-heating oils, tractor and diesel fuels, lubricating oils and greases.

Now . . . faster dissolving. The new finer-flaked Du Pont dyes now dissolve more rapidly than ever. As a result, more and more refiners are finding they can take advantage of the dust-free properties of Du Pont flaked dyes.

Lower handling costs. The new flaked form of Du Pont petroleum dyes makes them free-flowing and easier to handle than powders. They are more compact, take up approximately half the space of conventional powdered dyes. Drum height has been reduced to 22 inches. This, too, makes handling easier and faster, as well as saving valuable storage space for the refiner.

Many colors. You can get these finer-flaked Du Pont dyes in orange, red and bronze. (Blue dye is available in a crystalline form which has the same advantages as flaked dyes.) Samples and full details are available from your Du Pont Petroleum Chemicals representative. Or write to E. I. du Pont de Nemours & Co. (Inc.), Petroleum Chemicals Division, Wilmington 98, Delaware.

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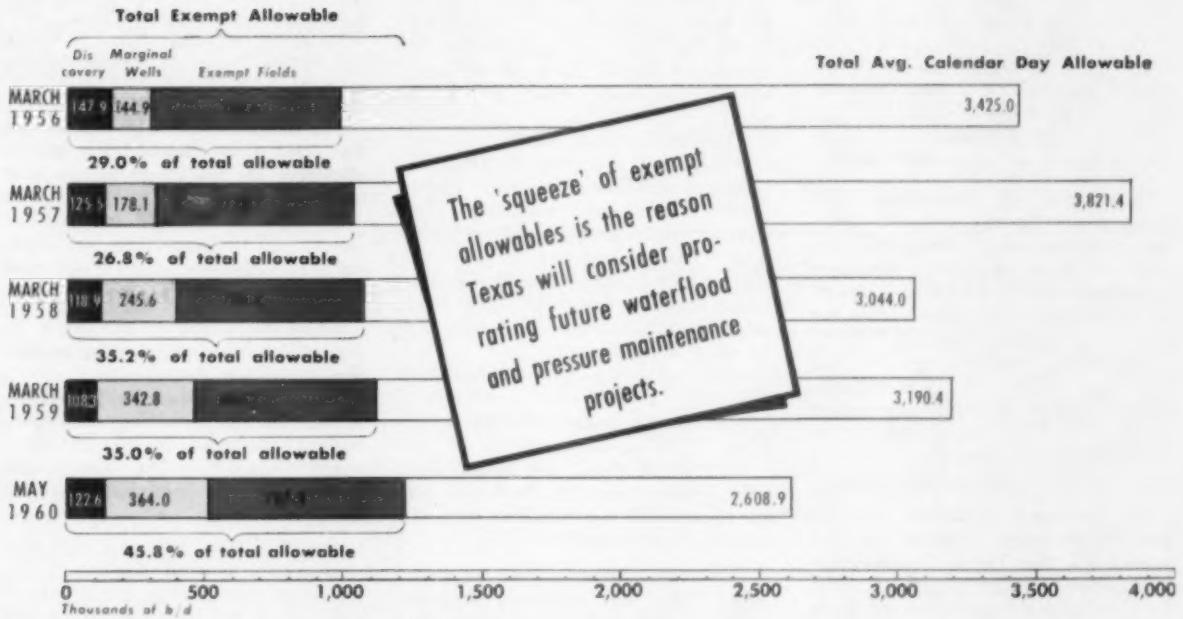
Better Things for Better Living . . . through Chemistry

Tetraethyl Lead and other Petroleum Additives



Will a Small Allowable Change Help?

Texas will study proration of waterfloods and pressure maintenance projects. But opponents point to the many other exemptions that affect the total allowable.

The Texas Railroad Commission is going to have a difficult job at best when its hearing opens June 16 to consider the proration of production from future waterfloods and pressure maintenance projects, and possibly to review MERs in all prorated fields.

The hearing will come at a time when the total exempt allowable from marginal, discovery, and all other exempt wells not subject to shutdown days is at a peak of 1,194,021 b/d.

It now amounts to 45.8% of the total state's average calendar-day allowable, a jump of ten percentage points in just a little over a year (chart).

The total exempt allowable only increased by 77,200 b/d between March, 1959, and last May 21, the date of the latest complete breakdown of the exempt allowable.

But between those two dates, the general oversupply of oil forced a reduction of 581,500 b/d in the state's over-all calendar-day allowable.

This meant a reduction of 658,700 b/d, or 32%, in the calendar-day allowable for prorated fields.

The real problem facing the commission is how to divide the available allowable equitably among the 195,470 wells in the state.

According to the latest commission tabulation, the 88,212 wells in prorated fields theoretically could produce 5,483,548 b/d, or 62.16 b/d per well.

But because of a surplus of oil, and the 1,194,021 b/d of allowable assigned to exempt wells, the prorated wells on the eight-day schedule in effect in May (and continued for this month) are only permitted an allowable of 1,414,882 b/d, or 16.04 b/d per well.

Oil men who are opposed to pro-rating waterfloods and pressure-maintenance projects argue the exemptions granted such projects are only a drop in the bucket compared to total exemption.

They point out that the existing waterfloods and pressure maintenance projects (which would not be included in any eventual proration plan that may be effected) only account for about 136,000 b/d, or 11.4% of the total exempt allowable.

The allowable assigned to waterfloods and pressure maintenance projects is included in the 707,456 b/d allowable assigned to exempt fields (red in the chart). That category also includes county regular exemptions and special field exemptions.

Since the commission issued an amended call for the hearing to include a possible review of MERs in existing and future prorated fields, some producers contend that the commission should consider all categories of exempt and prorated allowables.

They are concerned with the 122,560 b/d allowable now assigned to 1,597 discovery wells, the 364,005 b/d assigned to the 48,893 marginal and other wells, as well as the 707,456 b/d assigned to the 56,768 wells in exempt fields.

One producer group wants the commission to include a study of unrestricted production of lease condensate and natural gas liquids, which now averages 610,000 b/d.

Their argument is that this production amounts to another exemption that cuts into the market for crude, to the extent of from 800,000

b/d to 1-million b/d on an energy-content basis.

Most of this production comes from gas wells which are subject to proration. However, the only limitation on the liquids produced is that placed on the legally produced gas.

The West Central Texas Oil & Gas Assn. plans to argue that the commission should use a total reservoir displacement factor on the wet gas wells so that production of liquids may be held to a "reasonable" limit.

Opponents of waterflood and pressure maintenance proration claim that proration would defeat the purpose of these secondary recovery operations—which is optimum recovery of oil left in the ground after the primary producing stage.

Their basic argument is that, for maximum recovery of oil in the secondary stage of production, a higher injection rate of a waterflood (up to underground formation breakdown pressure) results in greater recovery.

The strongest opposition to such possible proration plans will be presented by the Texas Conservation Committee, a group formed last April that includes representatives of both independent producers and major companies.

Kenneth L. Smith, vice-president of Ambassador Oil Corp. and chairman of the committee, says the producers supporting the group's stand recognize the necessity for consideration of market demand.

The committee is willing to settle for a "practical" policy, and will urge for the adoption of a relatively fixed allowable for waterfloods and pressure maintenance programs, to permit "proper planning."

The committee's stand is that operators of waterflood and pressure maintenance projects need flexibility in production of assigned allowables to meet the varying conditions encountered in operations.

Should the commission decide to prorate waterfloods and pressure maintenance projects, the thinking is understood to be in the direction of an allowable somewhere between the marginal well permissible and the proration formula of the amended 1947 yardstick. The marginal well allowable ranges from 10 b/d for depths less than 2,000 ft. to 35 b/d for wells deeper than 8,000 ft.

The amended yardstick formula that became effective April 1, 1950, ranges from 18 b/d for depths under 1,000 ft. on 10-acre spacing to a maximum of 560 b/d for the 14,000-ft. depth bracket on 40-acre spacing.

Producers Win Kansas Shut-In After Price Cut in 19 Fields

A producers' rebellion against a 20¢-a-bbl. crude price cut posted by Derby Refining Co. has resulted in the second Kansas Corporation Commission shutdown order in recent years.

The order, which was to become effective June 1, covers 19 fields in Sedgwick and Sumner counties where Derby is the only purchaser. The company had been buying about 9,000 b/d in the two counties.

The commission indicated that the order would not be lifted until it is satisfied that production and sales can be made without waste.

The last time the Commission ordered a shut-in was in October, 1953. But that one affected the entire state.

Back in 1939 too, Kansas was one of the half-dozen states that shut off production for two weeks in the face of serious oversupply.

Producers contended that the shutdown order was necessary because sales at the reduced price would constitute waste under the state's conservation laws.

The producers urged the commission to act so that there would be no holdouts.

The producers argued that the price cut was unfair because the going price in Kansas was $3.05, and that the crude involved was high-gravity and therefore entitled to a premium.

Derby, of Wichita, posted its $2.85 price three weeks ago (PW—May20 '60,p12).

The Corporation Commission, at the same time, reduced the state's allowable for the fourth month in a row.

The June allowable was set at 293,000 b/d, down 2,000 b/d from the May allowable, and 25,000 b/d from the April level.

Oklahoma made no change in its June allowable despite pleas by several purchasers for a cut.

June production is expected to average 507,000 b/d. Purchaser nominations amounted to 494,300 b/d, down 595 b/d from May. The Bureau of Mines forecast indicated a demand of 540,000 b/d.

New Mexico's allowable for June represented a mild decrease. The estimated allowable for the Southeast was set at 299,288 b/d, down 613 b/d from May. For the Northwest it was 45,544 b/d, down 35 b/d. A supplemental allowable for the Southeast was 5,000 b/d, and for the Northwest, 2,000 b/d.

The Bureau of Mines forecast for June was 305,000 b/d, up 5,000 b/d from May.

Dear Stockholder: You Are Invited . . .

A gas transmission company is inviting vacationing stockholders to visit one or more of the compressor stations dotting its Texas-to-New Jersey pipeline system.

Texas Eastern Transmission Corp. feels that stockholders more than likely will be interested in seeing how some of the company's facilities work. Some, TET says, may be vacationing or driving near compressor station installations, and "might want to tarry long enough to stop in and see what makes a compressor tick."

Stockholders, however, will have to let the company know ahead of time what station they want to visit. This way, necessary arrangements can be made with the station supervisor, and a letter of admittance, along with a detailed vicinity map showing access roads to the station, can be sent to the stockholder.

Texas Eastern is mailing stockholders a map of its entire system, plus details of the types of compressor stations, so they can pick out the station they want to visit.

"Regardless of where you might stop for your visit, you will find that most station personnel will be conversant with what is taking place on the rest of the system, from Texas to New Jersey," Orville S. Carpenter, president, told stockholders.

"One look," he added, "will reveal why the company has such an excellent reputation for the manner in which we protect and service the plant investment."

Computer Speeds Geological Data

Scientists at Gulf Research & Development Co. have figured out a way to make electronic computers digest and interpret geological data so fast that it could advance the knowledge of geology "by 20 years."

As a matter of fact, Gulf reported, the technique makes it possible to handle more geological data in one year than geologists have succeeded in processing in 150 years.

Details of the technique were revealed last week at a meeting of the American Assn. of Petroleum Geologists and the Alberta Society of Petroleum Geologists at Banff, Alberta.

About the only thing that the process can't do is make final interpretations and decisions.

It will supply researchers with greater amounts of data than ever before, however, and in forms which are freer of human error and inconsistencies, according to Georges Pardo, of Gulf Research & Development.

Even though man can make machines respond with almost human intelligence, he said, "the final interpretation, and the ultimate decision to act on the findings, rests with the geologist."

It will, however, speed up mineral identification ten-fold.

Gulf cited as one example the time that can be saved in identifying mineral components in rock samples.

A geologist, working at top speed and with the help of an X-ray machine, might be able to identify as many as 20 samples per day.

With the new process, however, samples can be fed automatically into an X-ray machine that analyzes them, and punches out the data on cards.

When the cards are run through the computer, decisions similar to those of a geologist are made, and as many as 200 samples per day can be handled easily by one man.

With the process, computers can even do a crude form of "thinking," the Gulf scientists said.

Pardo used a chart to illustrate how the computer identified and classified an array of microfossil samples.

It separated deep water marine samples from shallow water samples, and picked out influences exerted by the currents of the Mississippi Delta.

The chart that was "drawn" by the machine, Pardo said, was not only as accurate as a man-made map, but was completed in a much shorter time—something like 15 minutes vs. several months.

The Gulf technique was developed after four years of intensive study, and the creation of a new "geological language" for the computer.

Pardo and his associates developed a formula whereby the components of words and sentences could be recorded and treated or manipulated individually.

Since they were interested in properties, and not the names of geological specimens, the scientists were able to code the desired characteristics on specially designed papers. These were fed to computers, and converted to abbreviations and tabulations that can be readily understood by trained geologists.

Case of the Missing Cutbacks

Daily average refinery runs, thousand b/d

Area	May 1960	% Chg. from May, 1959	April 1960	% Chg. April, 1960-May, 1960
District I	1,200	+10.0%	1,160	+ 3.4%
District II	2,327	+ 1.7	2,381	— 2.3
District III	2,959	— 3.2	2,962	— 0.1
District IV	227	+ 2.3	277	—18.1
District V	1,206	+ 8.7	1,181	+ 2.1
Total U. S.	**7,919**	**+ 2.0%**	**7,961**	**— 0.5%**

The unsolved mystery of the season as far as oil's concerned is this: What happened to the announced cutbacks in refinery runs?

Trying to locate the so-called decreases in refinery throughput is as hard as finding the proverbial needle in the haystack.

So far in May, despite the "substantial" reductions in runs publicized, crude processed through the nation's refineries is up—not down—from last year.

Runs are averaging 7,919,000 b/d now, up 153,000 b/d over a year ago, and just a razor's edge lower than a month ago.

The cuts can't be located in industry statistics. Every area shows an increase over 1959 except the Gulf Coast, and there the drop is small.

The largest increase in crude processed occurred on the East Coast (District I), where runs are averaging 1,200,000 b/d, or 10% above a year ago. The West Coast (District V) is a close second, with runs at 1,206,000, up 8.7%.

Although runs in the Gulf area (District III) are down, the decrease amounts to only a fraction more than 3%.

Nothing has occurred to brighten the picture in the past month, either. Crude throughput in May, slipped a scant 0.5% under April.

Typically, runs on the East and West Coasts were up. They were down in the Midwest, Gulf, and Rocky Mountain regions. The only appreciable cut in runs occurred in the Rockies, a "small" refining area, which handles only 227,000 b/d. Reductions where they would have counted—Districts II and III—were skimpy.

Refiners seem bent on playing with fire. Demand in May is running almost 16% below January—a normal seasonal trend—yet runs to stills are averaging only 4.3% lower.

Refinery throughput nationwide was cut only from 360,000 b/d from January, when record runs for the year were chalked up. Of the cut, the East Coast accounted for 27,000 b/d, the Midwest 237,000 b/d, the Gulf 97,000 b/d, and the Rockies 70,000 b/d.

On the West Coast, refinery throughput is running about 70,000 b/d—or something more than 6%—higher than January.

Meanwhile, product inventories are bulging at the seams.

Well into May, when gasoline stocks should be slimming down for the summer season, inventories are unwieldy at 214-million bbl. This is 10.5-million bbl. higher than the year-ago figure—when stocks were far from "satisfactory"—and more than 8% higher than in off-season January.

Venezuelans Seek 'Flexible' Policy

A call for a "flexible" oil policy in Venezuela was issued last week by Venezuelan business groups, which raised some searching questions about the government's policy.

The move followed discussion of a draft resolution calling for a "categorical definition" of Venezuela's official oil policy. It was presented at the annual assembly of the Venezuelan Federation of Chambers of Commerce & Production (Fedecamaras).

The federation consists of virtually all of Venezuela's business and industrial groups, including petroleum. The assembly was addressed by both the Oil Minister and the President of Venezuela.

A resolution adopted by the groups urged that Venezuelan oil policy be "adjusted to the realities of the market."

It noted that the competitive position of Venezuelan oil is "deteriorating," and that the future of Venezuela's oil industry is threatened by the present "paralyzation" of exploratory activity.

Incentives for reinvestment of profits in exploration, as well as other oil activities, are among measures recommended in the resolution for stimulating the oil industry and improving the market position of Venezuelan oil.

The businessmen also implied doubts about the advisability of activating the new national oil company, recently incorporated.

Their resolution recommended that activation of the Venezuelan Petroleum Corp. be postponed "until a more propitious opportunity"—in case certain objectives could not be met.

Among these objectives, the resolution listed: (1) operation on the same economic and administrative basis as private enterprise; (2) functioning of the company on "rigorous principles of competition and profitability, without improper privileges;" and (3) that the company should not become "a constant drain on fiscal resources."

The business groups were reassured by Venezuelan President Romulo Betancourt that the national company will operate in "peaceful coexistence" with the private oil industry.

The company, he told the closing session of the assembly, will be established on a sound economic basis. He said that it will not compete with private oil companies, and promised that it will not show losses such as those of the Venezuelan government airline.

The Good Neighbor Policy

The Oil Import Administration is doing its part to help British driver Donald Campbell try to break the world's land speed record.

Campbell will attempt to set a new record on Utah's Salt Flats in September. His auto will use British fuel and lubricants.

British Petroleum Co., which does not have an allocation to import petroleum products into the U.S., has been given special authority to ship turbine fuel and lubricants to Utah.

The company asked OIA for special permission to import the products under section 7B of the OIA rules, which covers "persons desiring to import small quantities."

So BP can now import 1,000 gal. of aviation-type turbine fuel and up to 800 gal. of special lube oil for Campbell's car.

Oil Minister Dr. Juan Perez Alfonzo held out the possibility of tax increases by Middle East governments as a solution to the problem of Venezuelan oil's relative cost disadvantage in world markets.

"We cannot provide the facilities for placing Venezuelan oil on an equal basis with that of the Middle East," the minister told the assembly.

"The only prospect is that Middle East countries increase their share of oil profits—instead of increasing production—to meet their economic development needs."

The oil minister's statement was in reply to the businessmen's warning that an "erroneous policy" on production costs could lead to "progressive deterioration" of Venezuela's position as a world oil supplier.

Perez said the principal factors in Venezuelan oil costs are the participation of the Venezuelan government and oil workers in the value of the product.

In Venezuela, he said, the oil companies' return on investment is only 14%, compared with 60% to 70% in the Middle East—"so the readjustment should be in the Middle East."

In any case, Perez added, Venezuela's geographical position close to the U. S. is a compensating factor that favors investment in Venezuela.

The idea of an international prorationing compact is "winning acceptance," the oil minister declared.

He said that an understanding between producing countries "could facilitate understanding with respect to opposing interests of consuming countries which want low oil prices, and oil companies which want bigger profits."

The oil minister also again promised that the new national oil company will be organized "by slow, sure steps."

Perez described the Venezuelan Petroleum Corp. as a "small company," when questioned by delegates at the assembly who expressed fears that it would be a costly and inefficient venture.

The oil minister admitted that Venezuelan crude production this year will not show the 4% increase he predicted earlier.

Directors of Fedecamaras questioned him about his previous statements that a 4% annual increment in oil production would be sufficient to meet Venezuela's revenue needs.

They asked the minister if the government would favor an 8% production increase if the world market could absorb that much.

His answer: "Yes, provided that that does not imply a drop in the sale price" of Venezuelan oil.

The minister said Venezuela is already studying income tax allowances to stimulate more oil exploration.

This, he said, would not only increase the ratio of reserves to production; it would also justify a bigger Venezuelan production quota under an international prorationing compact.

The oil minister also declared that oil reserves can be increased without granting new concessions.

In response to a suggestion from the minister, the Chamber of the Petroleum Industry (a member of the Fedecamaras group) announced at the assembly that it is preparing a study on how much of Venezuela's territory has been explored for oil.

The minister dashed cold water on a proposal for barter of Venezuelan oil. Most countries that want barter deals, he said, can only provide commodities in exchange that Venezuela does not need.

Supreme Court Rules Texas, Florida Offshore Rights Extend Three Leagues

- **In a widely split decision, the court based its ruling on agreements when the states entered the Union.**
- **But its ruling limits Louisiana, Mississippi, and Alabama to three miles.**

The U.S. Supreme Court ruled this week that only two of the five Gulf Coast states—Florida and Texas—have title to the submerged lands underlying the Gulf of Mexico beyond the three-mile limit.

As for Louisiana, Mississippi, and Alabama, the Supreme Court says the federal government has title to submerged lands off their coasts beyond the three-mile limit.

The over-all opinion was one of the most widely split on any recent opinion of the High Court.

In the case of Texas, the ruling was 6-1 that the state had proved its claim. Voting in the affirmative were Justices Harlan, Whittaker, Brennan, Stewart, Frankfurter, and Black. Justice Douglas dissented.

In the case of Louisiana, Mississippi, and Alabama, the vote to deny the petition was 6-1. In this case Justice Black was the only dissenter.

The vote to allow Florida the three-league offshore rights was 5-2. Justices Douglas and Harlan were the dissenters.

Chief Justice Warren and Justice Clark disqualified themselves from the entire case.

The court's ruling today—long awaited by the states as well as the oil industry—supposedly was to settle once and for all who had title to lands beyond the three-mile state boundaries.

In Baton Rouge, Louisiana's Attorney General Jack Gremillion said he was "very much surprised" by the decision. "It's making a fish of one and fowl of another," he said.

Louisiana's best hope now, he added, "is to extend our base line far enough out into the Gulf to enable us to receive the revenues from as many of the oil deposits as possible."

In dissenting from the Texas ruling, Justice Douglas wrote that Texas did not actually prove that its claimed three-league boundary had been approved by Congress when it was admitted as a state or at any later time.

Justice Black said all of the Gulf States should be treated equally. He said that if Texas was awarded a three-league boundary on its shaky evidence, then the others should be too.

On the Florida claim, Justice Harlan, in dissenting, disagreed with the majority ruling that Congress changed Florida's seaway boundary from three miles to three leagues when Florida was readmitted to the Union.

The Submerged Lands Act of 1953 granted to each state a seaward boundary of at least three miles.

The law also recognized that state seaward boundaries would be "as they existed at the time such state became a member of the Union, as heretofore approved by the Congress," but in no case should such a boundary extend more than three marine leagues (10.5 miles) into the Gulf of Mexico.

The Gulf States argued the law gave each of them rights to the submerged lands at least 10.5 miles beyond their coastlines.

Each also argued that its history prior to admission into the Union and subsequent events sustained the existence of its claims.

The Justice Dept. sought a ruling from the Supreme Court, declaring that none of the states could prove its right to submerged lands out to three leagues.

It argued that the Submerged Lands Act did not automatically grant the Gulf Coast states such a boundary—and that no state boundary can exceed the traditional boundary of the nation, three miles.

Justice John M. Harlan, who wrote the principal opinion, declared the 1953 act was so "ill-drawn" that it required a "shockingly long" opinion to construe the law.

Harlan used 81 pages to rule on the claims by Alabama, Louisiana, Mississippi, and Texas.

A separate opinion, written by Justice Black, decided the Florida case.

The court retained jurisdiction of the cases for whatever further legal proceedings are necessary to carry out the rulings.

Among other things, for example, Alabama, Louisiana, and Mississippi must now make an accounting to the federal government for all money derived from leasing or other activities in the submerged lands beyond the three-mile limit.

Most of the drilling of any consequence in the disputed zone—between the 3-mile and 10.5-mile lines—has been done off the coast of Louisiana.

Of some $308-million now in escrow, about $225-million comes from operations off the Louisiana coast.

Also, in the case of Louisiana, further proceedings will probably be necessary to determine the actual coastline.

The court notes that Louisiana is entitled only to submerged-land rights "to a distance no greater than three miles from its coastlines, wherever those lines may ultimately be shown to be."

The problem here involves the many offshore islands off the Louisiana coast.

The Louisiana offshore situation has been more complicated than that of other states all along, due to a basic difference between the state and the federal government as to where the shore line is.

That limit was not defined by the original Supreme Court "paramount rights" ruling, and the U.S. sought to impose a line, known as the [Interior Secretary] Chapman line, never recognized by Louisiana.

But because of the mounting interest offshore from Louisiana and the acreage leased, the Chapman line was used by the state and federal governments as a base line, for the purpose of implementing and administering an "Interim Agreement" entered into by Louisiana and the U.S. in October, 1956.

The offshore area was divided into four zones. Zone 1 was defined as the area seaward of and within the three geographical miles of the base. Zone 2 was defined as the area between three geographic miles and three marine leagues from the base.

Zone 3 was defined as the area between three marine leagues from the base and the outer boundary of the state as defined by an act of the state legislature.

Zone 4, seaward of this, was agreed to belong to the federal government.

SPECIALIZATION

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What's New / IN THE INDUSTRY

Outlook Appears Brighter For California Heavy Oil

The price of heavy crude in California may climb 10¢ a bbl. within the next six months to a year, according to George F. Getty II, president of Tidewater Oil Co.

Getty told the California Petroleum Press Club in Los Angeles last week: "If product prices approach normal, as they seem to be trending, then heavy crude will come up, perhaps 10¢ a bbl., and higher gravity may go down a little."

He added that since more and more refiners are putting in cokers, high-gravity oil is losing some of its attractiveness, and might lose about 10¢ a bbl. in price.

Getty also predicted that by the end of the year, discounted crude in California will be at a minimum.

The Tidewater president wasn't optimistic about the outlook for production increases.

"Excluding offshore, and that takes time to find and develop, it's pretty hard to figure that with existing tools and techniques California's production will be increased," he said.

•

Cost control is "one of the most promising and fertile" fields for improving profits.

That's what Albert L. Nickerson, president of Socony Mobil Oil Co., told the more than 400 members of the American Petroleum Institutes gathered for the mid-year meeting of the Division of Finance & Accounting in New York last week.

"Widespread development of cost-consciousness and the achievement of lower operating costs," Nickerson said, "could, in these Spartan days, be almost as vital to management as efficient accounting itself."

He outlined four requirements in preparing financial data for top management: (1) easily digestible information; (2) timeliness; (3) "responsibility accounting"; and (4) establishment of standards of cost control.

•

Over 70% of the American-flag tanker fleet will be physically as well as economically obsolete in less than five years.

That is the estimate made last week by the Committee of American Tanker Owners, Inc., for the Office of Civil & Defense Mobilization. It came in reply to arguments opposing CATO's position that the current situation threatens to impair national security, and that the government should take steps to insure maintenance and growth of tankers operating under the American flag. Specifically, CATO thinks the government should require that at least 50% of all imported oil be carried in American-flag vessels having coastwise privileges.

CATO estimates that slightly over 70% of the American-flag fleet is between 15 and 20 years old, and says the corrosion resulting from oil cargoes normally limits a tanker's life to less than 20 years.

•

Humble Oil & Refining Co. will be able to produce more than 350-million lb. of butyl rubber a year by the second quarter of 1961.

The company announced last week that it will boost production of butyl at its Baytown (Tex.) refinery from 125-million lb. per year to more than 170-million in the second quarter of 1961.

The company has just completed an expansion at its Baton Rouge plant to increase output by more than 44-million lb. A further expansion will provide facilities for manufacturing an added 40-million lb. a year. This second stage is well under way, with completion slated before June 30, 1961.

The expansion is due to a big increase in demand for butyl, Humble says.

•

The Federal Power Commission has refused to reopen the controversial Midwestern Gas Transmission case. The vote was 2-1.

The majority found no merit in coal interests' arguments that: (1) Midwestern didn't meet terms of its FPC permit because its supplier received a 20-year license to export gas from Canada's National Energy Board, while its contract is for 25 years; and (2) coal intervenors were denied "due process of law" because FPC refused them opportunity to contest Midwestern's financing plan, approved by FPC on Jan. 5, 1960.

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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
June 3, 1960

Independent producers have dropped plans for introduction of a natural gas bill this year. A group of producer organizations, led by the Independent Petroleum Assn. of America, had hoped to have a new gas bill sponsored in the House and Senate early enough for some action by Congress this year. When President Eisenhower indicated recently that he still thought federal controls should be eased on gas at the wellhead, there was a flurry of producer activity for a quick gas bill push. But political realism and a short session of Congress now has forced producers to abandon their plans. Instead, they will start working for a bill in 1961.

•

Fidel Castro's latest action—pushing Russian oil on U.S. refiners in Cuba—is causing concern in Washington. Last week, the Cuban government notified three companies—Jersey Standard, Shell and Texaco—that they must refine some of the Russian crude involved in the sugar-for-oil trade deal between Cuba and the USSR (page 54). Now the two U.S. companies are protesting strongly to Washington.

But the State Dept. is expected to maintain its hands-off policy on Cuba. Top officials think the Castro regime will eventually topple because of internal troubles. In the past, when other U.S. companies operating in Cuba have run afoul of Castro, the Washington position has been one of moral support but no direct action. "The days of the gunboat are over"—that's the byword. But the companies ask a question: "When will Castro fall?"

•

Venezuela, which has tried to keep a chummy relationship with Cuba, is irritated by the Russian oil deal. Any Russian crude refined in Cuba will necessarily displace other oil. And most of the crude presently comes from Venezuela. U.S. sources say Venezuelan officials are upset at the prospect of a further loss of oil exports, and may try to bring some pressure on Castro. Although Venezuela publicly has continued to be friendly to Cuba—at a time when other Latin countries in the Organization of American States have opposed Castro—the Cuban premier and President Betancourt of Venezuela privately speak harshly of each other.

•

Controversy over Federal Power Commission activity has spurred another investigation—this time by a Senate committee. Chairman Warren Magnuson (D., Wash.) of the Senate Interstate & Foreign Commerce Committee plans a broad study of Washington regulatory problems—especially heavy backlogs of cases, such as at FPC.

•

The Oil Import Appeals Board is keeping its strong negative record intact. Last week it turned down nine more appeals for initial or increased allocations. One of the companies turned down, Atlantic Refining Co., accused the board of making a "mockery" of the appeals procedure. "The board has now conclusively demonstrated that no integrated petroleum company not threatened by immediate bankruptcy can hope to obtain relief," Atlantic said.

brass tacks

FROM HALLIBURTON

Five stage job in New Mexico

Hydra-jet initiates fracture in Colorado well

11,000 ft. Vis-O-Frac job in Alabama

Sandoil job gives big yield in Aux Vases (ALL) sand

FRACTURING FACTS

This new well in Lea County, New Mexico, was treated at five intervals from 4,161 to 4,436 feet in the Grayburg Sand with Halliburton's Sandoil technique. A total of 54,300 gallons of refined oil and 80,000# sand were injected into five zones, each isolated with Halliburton HM Straddle Packers. This well – static before treatment – was still flowing its allowable 3½ months after fracturing.

By using Halliburton's Hydra-Jet tool to initiate fracture below 9,000 feet in this old well in Rio Blanco County, Colorado, breakdown pressure in open hole was lowered to 2800 psi. After fracturing the Green River Formation with 40,000 gallons of Waterfrac prepared with Halliburton's ***New*** WG-4 gelling agent and 45,000# 20-40 Ottawa sand, gas flow was quadrupled. Although many other types of fracturing treatments have been employed in this area none gave increases comparable to this technique.

Halliburton's Vis-O-Frac was used to fracture the Upper Rodessa at about 11,000 feet in a well in Mobile County, Alabama. The low friction loss properties of this gelled lease crude permitted the injection of 55,000 gallons and 75,000# 20-40 sand (up to 1¾#/gal) down the tubing and annulus at pressures of 4500-5200 psi and an average rate of 17 bbl/min. This new well (listed as non-productive upon completion) recovered 27 barrels per hour immediately after fracturing and recent reports put production at 244 barrels flowing per day through ⅛" choke. All offset wells are pumping.

After a 2 bbl. per hour start, this new well in White County, Illinois, was treated with 26,000 gallons of lease oil plus 600# of Halliburton FL-2 to help control fluid loss. Sand used in this well was 20,000# 20-40 followed by 10,000# 10-20.
Depth of the interval treated in the Aux Vases sand was 3,116 to 3,143 feet. After the job, test flow showed 80 bbls. per hour . . . and after four months, flow rate was still an impressive 120 bbls. per day through 5½" casing.

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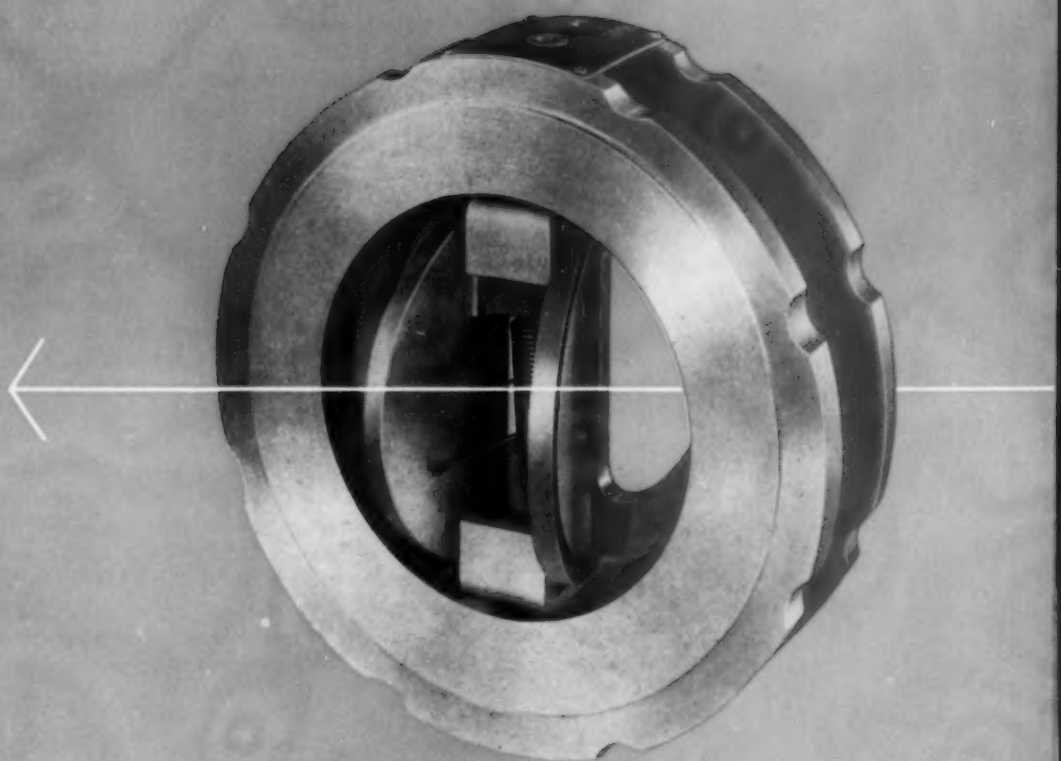

Mission Duo-Chek valves

Mission Duo-Chek Valves weigh approximately 10 per cent as much as conventional check valves. Smaller, lighter Duo-Chek Valves mean that you save on space, weight, installation, and price. But, you are getting a check valve with a bubble-tight seal, anti-slam closure, long life built in. No load is carried on the plate hinges. No external parts. No lubrication required.

The sine wave seal prevents seepage, yet holds without leaking or distortion at maximum test pressure. The sealing material is molded and bonded into a metal groove, making an "O"-ring type seal. Pressure deforms the packing. Metal-to-metal contact completely encloses the sealing material, preventing pinching off under pressure. Available in steel, 316 stainless, aluminum, and bronze to fit ASA raised face or ring joint flanges.

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69—100

Seek Okay for Big Tar Sands Project

A Canadian company will seek approval of a multi-million-dollar plan to produce and market 31,500 b/d of oil from Alberta's Athabasca tar sands.

The Alberta Oil & Gas Conservation Board meets next week to consider a $110-million proposal for commercial development of Athabasca tar sands.

The proposal, the first to be presented before the board, is being made by Great Canadian Oil Sands, Ltd.

The board recently was empowered to decide in specific cases what amount of oil may be removed from the tar sands without upsetting the market for other Alberta oil (PW—Apr.15 '60,p32).

A four-company team composed of Imperial Oil, Richfield Oil (L.A.), Cities Service Athabasca, and Royalite Oil is already operating a $3.5-million pilot plant in the Mildred Lake area to determine the feasibility of commercial production from the tar sands (PW—Jan.15'60,p9).

No pilot-plant operations have been conducted, nor are any planned before proposed construction of the full-scale project, scheduled for later this year.

Initial production is scheduled for the fall of 1962, with full production the following spring. Work this year will begin with clearing and site surveying. Some 1,300 workers are expected to be involved.

In its application, Great Canadian Oil Sands says production will amount to 31,500 b/d of 24-gravity crude, at an average cost of $1.82 per bbl.

The total bitumen content of the "better grade" sands in the project area is estimated to be 900-million bbl.

The project area is about 20 mi. north of Ft. McMurray, in the Mildred-Ruth Lakes area on the 3,898-acre lease No. 4, a sublease from Sun Oil Co. and its associate, Abasand Oil, Ltd.

The tar-sand-derived crude will travel through a 290-mi. pipeline to Edmonton, where it will be bought by Sun Oil Co. and Canadian Oil Companies, Ltd.

Great Canadian has agreed to sell an average of 15,000 b/d of desulfurized crude to Sun and an average of 5,000 b/d to Canadian Oil.

Price for the crude will be the current price in Edmonton for Leduc crude, or crude of like specifications, in effect on date of delivery.

This current price is defined as the posted field price for Leduc crude plus an allowance equivalent to the cost of delivery by pipeline of Leduc oil from Leduc field to Edmonton.

Leduc crude currently brings $2.53 per bbl. of 35 imperial gallons at the wellhead.

Canadian Oils said the Athabasca crude would go to its Sarnia refinery, whose capacity was increased last year from 30,000 b/d to 50,000 b/d.

Sun's plans for the Athabasca oil were not disclosed.

The 16-in. pipeline from the project area is to connect with the Interprovincial tank farm at Edmonton. It's designed to handle a throughput of 32,000 b/d with no intermediate pump stations.

Crawler-mounted bucket-wheel excavators will be used to remove the overburden and also to mine the tar sands.

The overburden will be handled by a shiftable conveyor system from a bucket wheel excavator to a crawler-mounted stacker, for disposal in the mined-out area.

The oil sands will be handled by a shiftable conveyor from an excavator of the same type to the extraction plant.

Tailings from the extraction plant will move by shiftable conveyor system to a crawler-mounted stacker for disposal in the mined-out area.

Great Canadian's proposed extraction plant would use the hot water washing method. It is designed to handle 88,000 tons of tar sands per day.

The oil separation method, the company says, is basically the same as that used at the experimental plant at Bitumount, started in 1944 as a cooperative venture of the Alberta government and Oil Sands, Ltd.

This plant has a capacity of 500 tons daily.

The extraction unit, designed by Patterson Foundry & Machine Co., would be divided into eight complete trains, each handling 11,000 tons daily.

In this method, the raw tar sand is conveyed to a rotary conditioning drum, where about 138 gal. per minute of 185F water and 33,200 lb. per hour of steam are added to the tar sand to facilitate breaking it into a fine dispersed state.

The "GPM" mixer is designed to wet each individual sand particle and to aerate the oil.

From this mixer, the stiff sand mixture flows to a premix tank, where it is flooded with 185F water to separate the oil completely from the sand.

Then the mixture is distributed onto the water surface of the separation tank, where the oil-water-air froth will float to the top of the tank.

From here, the froth flows by gravity into the deaeration tank.

The 6.2-gravity oil from the extraction stream must first be deaerated before it can be dehydrated.

This is necessary to eliminate the explosion hazard which would other-

Take a look at a *dramatically different* aluminum tank*

Revolutionary new Trailmobile uses integral extrusions as main structural members to achieve the first major break-through in aluminum tank design.

This new Trailmobile is not just another steel tank design fashioned in aluminum. It is a basic and radical departure from conventional design that for the first time utilizes the full potential of aluminum. ☐ In place of the usual shell welded together in sections and heavily reinforced at points of stress, this tank uses as primary structural members aluminum extrusions which are an integral part of the shell itself. Located at the top and bottom of the shell where stresses are the greatest, these extrusions eliminate weakening cross-wise welds and provide strong longitudinal members to dissipate stresses and strains over the entire length of the unit. And in this respect the new design is much like that of an I-beam, which is also integrally reinforced at top and bottom to resist damaging, concentrated loads and bending forces—the chief causes of costly failures in tank trailers. All this adds up to greater strength plus lighter weight—which is the ultimate aim in designing in aluminum. And to you this is added assurance against costly failures that result in leakage, downtime and loss.

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TR-962

Phantom view shows how aluminum extrusions become an integral part of the tank shell. Note how this design eliminates cross welds or potential failure areas in the main reinforcing beams.

**Patent pending.*

wise exist if the air were permitted to enter the dehydration equipment.

The dehydrated product would then be charged as feed to a coking unit, from which the principal products are naphtha and gas-oil.

These product streams have a high sulfur and nitrogen content, which must be reduced before the product is saleable.

The two desulfurized streams are blended into storage and delivered to Edmonton as a synthetic crude.

Byproducts of the processing operation, except those used for plant fuel, will be discarded.

Great Canadian said no facilities are included in the project for the marketing of such byproducts as fuel gas, fuel oil, coke, and sulfur.

Cash requirements in Canadian dollars include a total cost of $99,355,035, plus $11,326,500 as working capital.

The cost includes $18,700,000 for mining and conveying systems, $24,655,035 for pipeline, bridge, and road, and $56-million for extraction, processing, utilities, etc.

Prime contractors include Link Belt, Ltd.; M. W. Kellogg Co., Ltd.; Mannix Co., Ltd.; and Lubecker Maschinebau A.G., of Germany.

Corrosion Control Made Easier

A unique experiment in oil well casing corrosion control is proving effective in western Kansas for Sunray Mid-Continent Oil Co.

The project is located on a 640-acre lease, section 36-16s-21w, Ness County, about 60 mi. west of Great Bend.

The lease contains six producing wells and a salt water disposal well.

Sunray's new cathodic method employs a single, deep "ground-bed" well, centrally located to provide protection for all nearby producing wells.

The usual approach to cathodic protection of oil well casing in recent years has been to bury numerous anodes at shallow depths (usually 10-20ft.) around the producing well. In some instances, as many as six of these shallow ground-bed wells are required.

Sunray's technique eliminates shallow ground-bed anodes by using one relatively deep ground-bed well drilled through the zone of maximum corrosion. The anodes are suspended opposite the corrosive zone.

Company engineers believe the single-well system can give potection to as many as 20 wells within a radial distance of 1 to 5 mi.

Plans are already well advanced for the installation of a second ground-bed system on a Sunray water-flood property in southern Arkansas.

There, 52 wells will be protected by three deep ground-bed wells.

The company will attempt to protect well casing at three corrosive levels (salt water sands) by directing current into the middle zone.

Field test data so far indicate that the new Sunray method will be more effective and less expensive than present methods.

Costs of the Ness County project have not been released. They are said to be high, mainly because of the experimental nature of the test.

Sunray believes, however, that on subsequent installations costs will compare favorably with the costs of current methods.

Scipio Reserve Put At 45-Million Bbl.

Recoverable oil and gas in the Scipio-Albion trend in Michigan is estimated at 45-million bbl. of oil and 210-billion cu. ft. of gas.

This estimate was made last week in Banff, Alberta, by R. J. Burgess, of Imperial Oil Ltd., at the third Western Canada regional meeting of the American Assn. of Petroleum Geologists and the Alberta Society of Petroleum Geologists.

Oil in place along the trend is figured at 10,000 bbl. per acre.

This, said Burgess, is a conservative figure, since a one-millidarcy cutoff was used for net pay.

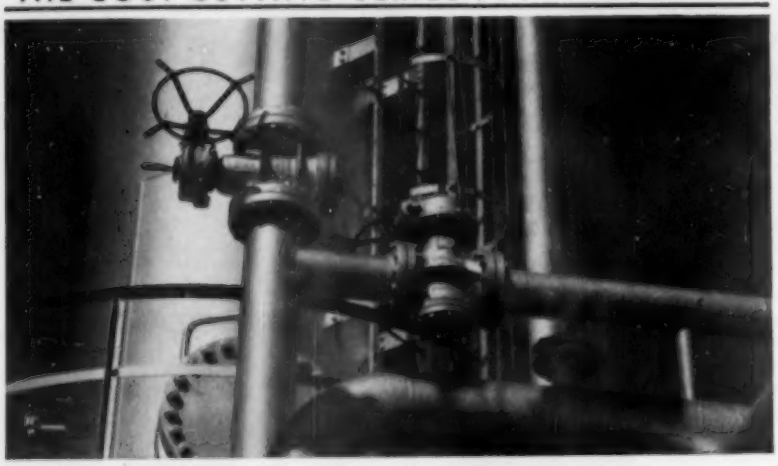
Some 40% of the oil in place, or 4,000 bbl. per acre, is estimated to be recoverable. The gas reserves are estimated on the basis of 70 ft. of net pay and a recovery of 270,000 cu. ft. per acre-foot.

The trend is now 23 mi. long and about 3,500 ft. wide. Some 40% of this area is already proven, and it's probable, Burgess said, that 70% to 90% will ultimately prove productive (PW—Mar.11'60,p18).

All production comes from a "ribbon" of secondary Trenton-Black River dolomite in the trough of a linear syncline.

Subsurface geology is believed to be the best exploration method in the area.

THE COST CUTTING SERIES . . .



LUBRICATED Valves Prove Safer

Where valve leakage is not only costly, but dangerous, lubricated plug valves assure positive shut-off. At the large natural gasoline plant (above) Rockwell-Nordstrom valves are used on high pressure gas lines. Pressurized lubricant in these valves acts as a tough, leak-proof seal without the drawbacks of metal-to-metal seats that are easily cut and quickly worn. Lubricant also prevents wearing friction for longer valve life. Where flow must be maintained without interruption, instant quarter-turn closure permits fast, dependable control. For complete details on Rockwell-Nordstrom valves and valve accessories, write:

ROCKWELL MANUFACTURING COMPANY
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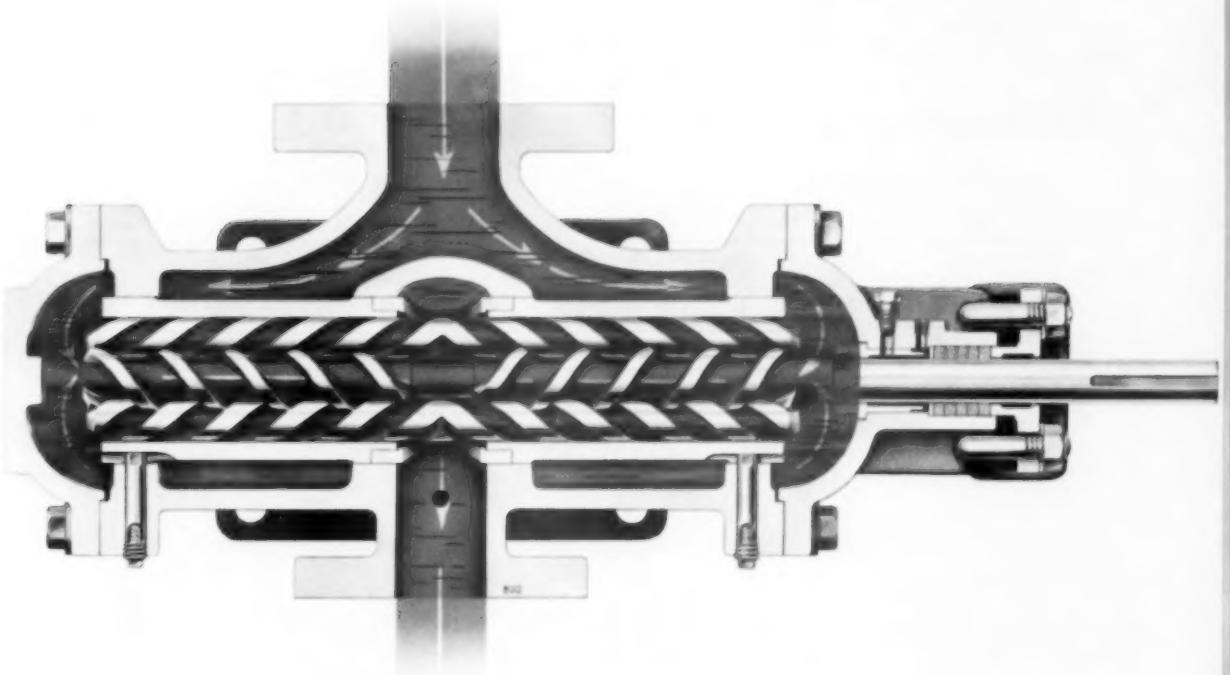
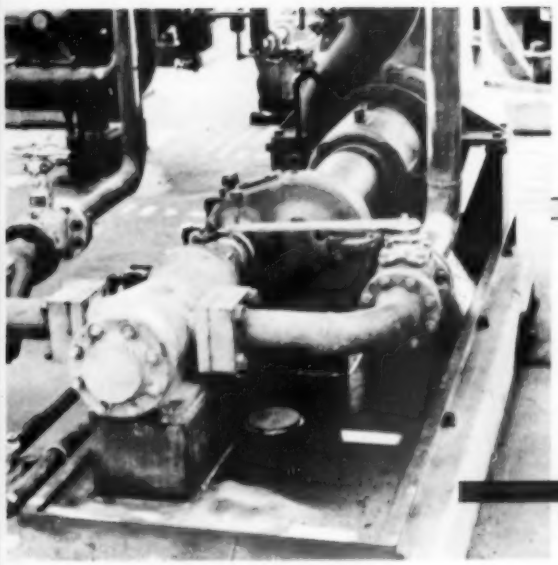
HOW THE DE LAVAL IMO PUMP

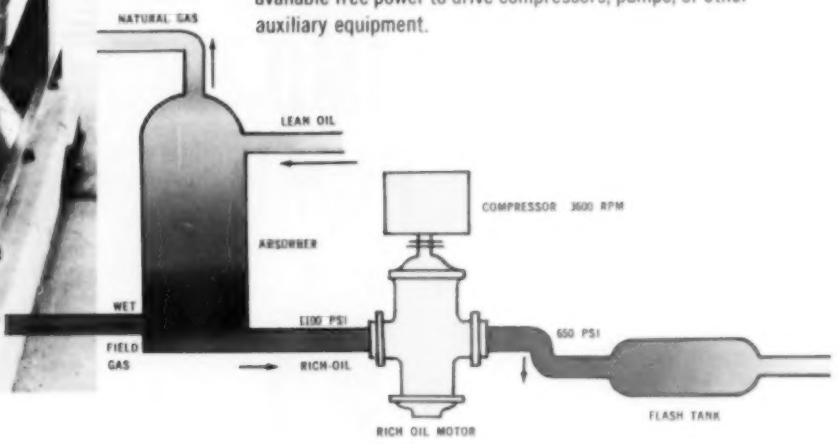


SERVES THE PETROLEUM INDUSTRY

THE IMO AS A RICH OIL MOTOR



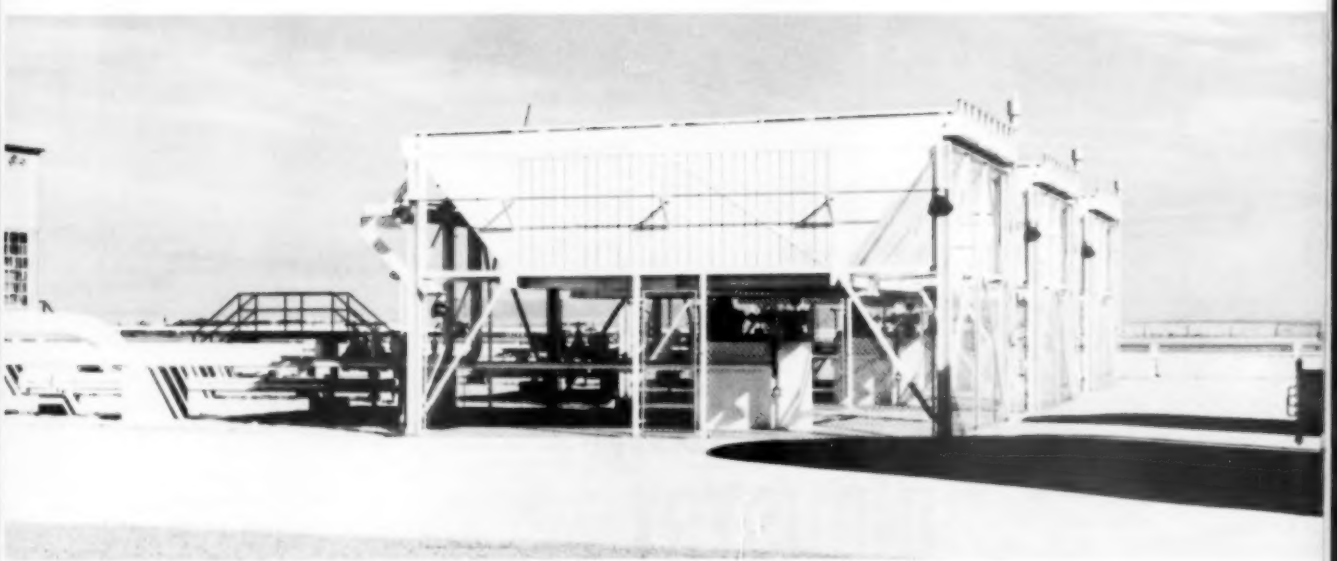
In the absorption process in a natural gasoline plant, the IMO utilizes the pressure drop between the absorbers and flash tank, which is normally accomplished through a reducing valve. The motor is capable of 500 psi differential, 900 gpm, 200 hp, and speeds to 3600 rpm. Use this available free power to drive compressors, pumps, or other auxiliary equipment.



THE IMO FOR HYDRAULIC FAN DRIVE

Solve power transmission problems, reduce costs and maintenance with a hydraulic fan drive system.

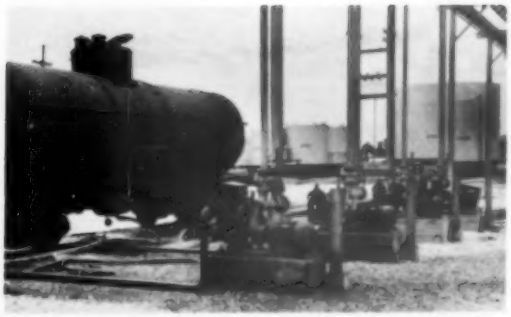
Look to IMO pumps and motors to cover the widest range of fan speeds and horsepowers requiring reliable trouble-free operation. Wide range of sizes permit extreme flexibility of system design.



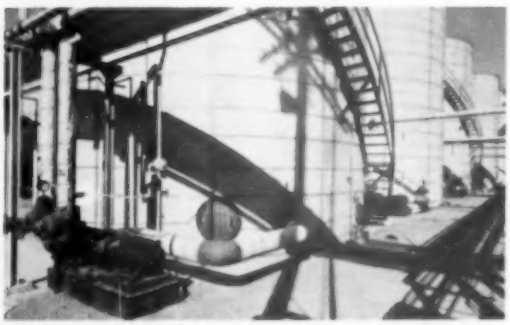
THE IMO AS A CRUDE OIL PUMP
Eight IMO units are pumping crude in this Venezuelan Sun Oil Company installation on the first fully automatic flow station on Lake Maracaibo, Venezuela. Each pump is designed to deliver 12,500 b/d at 1000 psig at a direct drive speed of 1750 rpm.
Designed, fabricated and installed by J. Ray McDermott & Company, Inc. of New Orleans, La.

OTHER USES OF THE IMO PUMP IN THE PETROLEUM INDUSTRY

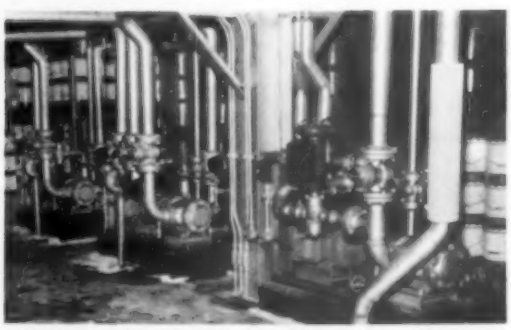
IMO actuates sucker rod in this hydraulic pumping jack. Pressures to 300 psi.



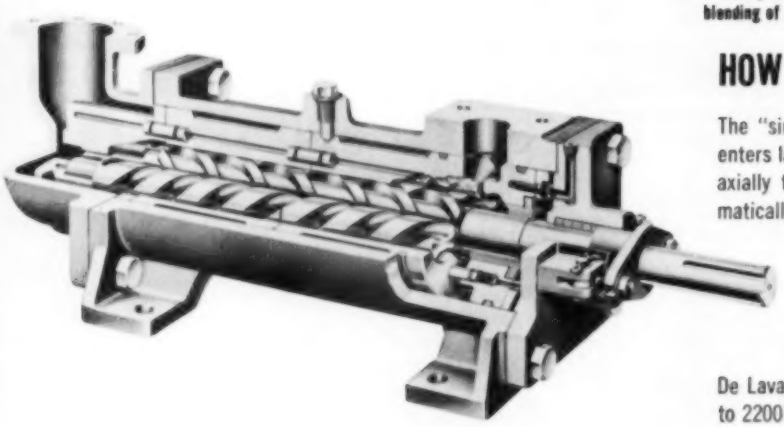
This tank car unloading application demonstrates the versatility of the IMO pump for practically any oil handling operation.



IMO pump for road oil blending. Handles 295 gpm of asphalt at 300 F. 950 SSU, and 50 psi.



Remotely controlled, the trouble-free IMO is used in packaging and blending of lube oil.



HOW THE IMO PUMP WORKS

The "single-end" IMO pump is illustrated at left. Fluid enters large inlet opening at outboard end and is moved axially to discharge without pulsation through mathematically calculated thread form.

The "double-end" design is illustrated on the front cover.

De Laval IMO pumps have only three rotating parts and do not require timing gears.

De Laval IMO pumps are capable of pressures from 10 to 2200 psi and capacities from 100 b/d to 67,000 b/d.

Illustrated are a few applications where the De Laval IMO pump has proved its reliability and efficiency. If you have a specific oil handling problem, a De Laval representative will be glad to discuss it with you.

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Tight Pay Sands Can Be Profitable

Massive fracturing is the answer, Conoco has found. It now has nearly 200 commercial wells in the Sacatosa field, which was formerly noncommercial.

Continental Oil Co.'s experimental fracturing program in Sacatosa field, South Texas, has turned the previously noncommercial field into a profitable operation.

The field is located on the Chittum Ranch, Maverick County. Most of the production is from the San Miguel sand (Upper Cretaceous), in a stratigraphic trap overlying the huge Chittum Arch (PW—Sep.25'59,p20).

There had been several discouraging exploratory programs on the lease before Conoco acquired it in 1954 and started its experimental fracturing program.

Now the company is drilling at the rate of one well every two days toward a target of 250 wells in the field by the end of the year. Well depths range from 1,300 to 1,900 ft.

Wells that once averaged 6 b/d or less now average 50 b/d or more on a sustained basis.

Cumulative production from the San Miguel-1 sand as of May 1 was 258,000 bbl. of oil. Some 166 wells were producing at that time.

These wells were potentialed for 20 b/d to 130 b/d, with more than 75% above 60 b/d.

What's more, multipay possibilities in the area have been established.

About 300 ft. below the San Miguel-1, the San Miguel-5 is productive on the east edge of the field. The company has two dual completions producing from the San Miguel 1 and 5 sands.

The Sacatosa (1,800-ft.) lime was found just north of San Miguel-5 production. Two wells here are also dually completed.

Five miles north of San Miguel-1 pool, the Navarro C-2 sand was found at 250 ft. This sand, which has a permeability of 100 to 300 millidarcys, is about 20 ft. thick.

Just one well, which produces about 3 b/d, has been completed, but the company's engineering staff currently is analyzing methods for increasing the recovery from this reservoir.

And in the northeastern part of the 145,378-acre lease, which also touches Dimmit and Zavala Counties, there is one well in the Plumly gas field. This well was completed in April, 1956, for an initial open flow potential of 4.9-million cf/d.

The fracturing program at Sacatosa was necessitated by a lack of permeability in the pay zone.

Average porosity of the San Miguel is about 28%, but horizontal permeability in the very hard consolidated sand is only about 4 or 5 millidarcys. And vertical permeability is only about half that much.

Conoco has used up to 135,000 lb. of sand, 60,000 gal. of crude, and Adomite, a special fracturing agent, in fracturing each of the nearly 190 wells completed so far. A typical job:

Pump 30 bbl. of lease crude treated with 0.1 lb. of Adomite per gal. to break down the formation and establish a pumping rate.

Then pump 131,500 lb. of 20-40-mesh angular sand in the following manner, using crude treated with 0.05 lb. of Adomite per gal.:

First, 5,000 gal. with 1½ lb. of sand per gal.; then 5,000 gal. with 2 lb. of sand per gal.; 5,000 gal. with 2½ lb. of sand per gal.; and finally 33,800 gal. with 3 lb. of sand per gal.

The 20-40 mesh sand is followed by 12,000 gal. with 3 lb. of 10-20 mesh angular sand per gal. to hold open the fracture and help eliminate the problem of sand influx.

After fracturing, the well is put on choke to control the return of sand from the fracture. Initial production after fracturing usually varies from 100 b/d to 200 b/d of oil.

The biggest fracturing job in the field required 270,000 lb. of sand, and 180,000 gal. of crude.

To determine the shape and size of the fracture, 12 core holes were drilled around this hole. The core holes ranged from 50 ft. to 200 ft. from the fractured well.

Conoco said evidence of fracture "was definitely found in some of the core holes."

The Sacatosa wells are fractured on a single plane. An eight-way jet is being used for perforating, says Conoco, except where formation breakdown can't be obtained after perforating with jet charges.

In the latter cases, the company says, the "sand jet" has been used satisfactorily.

Log analysis plays a big role in completing the Sacatosa wells.

The logging program was derived from evaluating several types of logs.

Conoco's practice now is to run an Induction-Electrical log and a Microlog as soon as possible after drilling the hole.

This is done because the length of time the mud is on the formation face appears to affect the log results.

After casing is cemented, a Gamma Ray-Neutron log is run for depth correlation and perforation placement.

As for the mud program, testing revealed that a phosphate mud does a satisfactory job at the lowest cost.

The company is using a phosphate mud having a water loss of from 4 cc. to 7 cc. and a weight of 11 lb. per gal.

Conoco now has a local production automation system in effect in the field.

The basic unit of the system is made up of four 640-acre sections, each with four satellite batteries and one central control battery. The satellite battery consists of header and test equipment.

All controls are in the central battery, where the production is separated, stored, and measured.

Conoco says the automation facilities and handling of the collected data can be divided into these categories: (1) Control and scheduling of oil products, (2) periodic testing of levels in vessels, (3) supervision of levels in vessels, (4) measurement of oil produced and witnessing of its transfer from the lease to the pipe line, (5) automatic use and storage of production data, and (6) remote operation and transmission of controls and data.

Production is controlled by a time clock located at each pumping unit motor controller.

Sacatosa wells have an average flowing life of 6 to 9 months before they are put on pump.

Crude from the field currently is trucked, but a pipeline outlet is scheduled to be completed by early summer. Humble Pipe Line Co. has started work on a 63-mi., 8-in. line between the field and Pearsall, where it will connect with Humble's existing system.

The average well in Sacatosa field has a final cost of $22,000.

A breakdown of this shows $17,000 for a completed well, $2,400 for lift equipment, $1,500 for automation, $450 for electrification, $150 for roads, and $500 for miscellaneous lease expenses.

CASING houses submersible pump that's not affected by river rises and falls as it pumps water from river to waterflood treating plant.

How to Waterflood Under River Water

Has anyone ever tried to waterflood an oil formation when the project area itself is often under water? It's being done in Oklahoma.

The 170-acre waterflood tract, now owned and operated by Swann-Estridge Operations, is located in the Caney River bottom, 2 mi. south of downtown Bartlesville. It's one of the oldest portions of the famous Bartlesville pool.

Original development for primary reserves was done by Prairie Oil & Gas Co. around the turn of the century.

When primary recovery fell in the early 1930s, the property was returned to the original royalty owner and the wells were put on pump.

Stripper production was still being obtained from half-a-dozen remaining wells when it was bought by Swann-Estridge last year.

The fact that the property is under water several times a year from the Caney River compounds the normal operational difficulties.

"In the early days, it was a simple matter to shut in production until flood waters receded," says Kenneth Shirey, production superintendent for Swann-Estridge. "Then the operator could make up for lost production time.

"But an efficient waterflood in the Bartlesville sand requires water going in and out at a constant rate, and the exclusion of raw river water which, if it enters through the well bore, could introduce harmful bacteria or silt up the pay face."

Studies show the two sections of Bartlesville sand are capable of yielding 5,500 bbl. of oil per acre if waterflooded, Shirey says. The pay sands are at 1,245 ft. and 1,280 ft. and are separated by an impermeable shale and lime barrier.

Swann-Estridge presented its problem to Jones & Laughlin Supply Division and asked for help in planning a waterflood that would remain operable under water.

The result, says J&L waterflood engineer W. K. Garms, is an assortment of specially designed equipment not to be found anywhere else in the oil industry.

The first job in the project was to design and build a water-supply pump with the river as the injection water source.

This was a feat that had been tried before without notable success.

One operator a few miles upriver, for example, had a design that looked good on paper. It was an electrically powered pump mounted on tracks that automatically raised and lowered with the river level.

The first subsequent big rise in the river, however, left the track in a twisted pile of steel.

The answer, which so far, has proved itself through two river rises, is a Worthington 6-M-11, two-stage submersible pump driven by a 3,600-rpm., 7½-hp. submersible electric motor.

Since the supply system not only must lift water from the river but also must pump it 1,200 ft. through 4-in. underground steel pipe to the treating plant, the pump's design capacity is figured at 175 gal. per minute deliverability.

This is calculated at a 100-ft. discharge head based on the elevation rise between the river bank and plant site, plus allowance for friction loss in transit.

Both pump and motor are inside 8⅝-in. casing that's welded to three support legs anchored in concrete. The casing extends to the river bottom, with the lower 8 ft. slotted for water access. About 30 ft. of pipe extend up the river bank above the water level at an angle of 30 degrees (picture, above).

PUMP JACKS and control boxes are on stilts above flood level.

BAFFLES between plant and storage assure mixing of chemicals.

The entire installation can be completely submerged by rising water and still function.

The water supply pump is controlled automatically from the plant.

A manually operated control valve is at the plant on the water supply line. When the valve is turned on, pressure is lowered in a surge tank on the river bank. This hydraulically activates a pole-mounted pressure switch and turns on the pump.

When the water-line valve is turned off, pressure builds up in the surge tank to reverse the procedure and turn off the pump.

The surge tank provides the necessary cushion to prevent the pump from cycling continuously due to minor pressure changes.

Source water piped to the plant goes through a treating house, where mechanical feeders measure pre-set amounts of dry chemicals into the water.

Chemicals now being used are copper sulfate, a bactericide and fungicide; lime, which increases water alkalinity to a pH of 7.4; and aluminum sulfate, a flocculant which aids in settling suspended solids.

Large amounts of the copper sulfate are needed to control algae in the settling ponds, which have been a big problem, especially when the river is at low level.

The current ratio is about 100 lb. of the fungicide to 15,000 gal. of water.

Treated water flows into the first of two settling ponds through 125 ft. of open aqueduct containing a series of baffles which assure mixing of the chemicals in the water (right picture, above). The system was designed by Shirey.

Retention time is about 4 hours in the first pond, 8 hours in the second.

Each of the ponds is 75 ft. wide and 150 ft. long; and each has a capacity of 17,000 gal.

Water from the second retention pond is circulated through two 6x8-ft. graded-media-type filter tanks to remove objectionable impurities.

The pump that circulates the water through the filters is a centrifugal type driven by a 3-hp. motor. The back-wash pump is of similar design, but is driven by a 5-hp. motor. Each filter tank has a recommended capacity of 2,400 b/d.

The automatic back-wash system is activated by a pressure differential switch that measures across a filter bed. At a pre-set pressure build-up, the switch shuts off the circulating pump, activates automatic butterfly valve mechanisms on the filter manifold, and turns on the backwash pump.

After a pre-set time cycle controlled by a time clock, the cycle is reversed, and circulation is returned to the filters after accumulated turbidity has been flushed to a sump pit.

Once filtered, the water is pumped to a 500-bbl. redwood storage tank, from which it is then gravity-fed to the suction header of the injection pumps.

The present plant capacity of 3,200 b/d of water ultimately will be increased to 4,800 b/d by the addition of a third injection pump.

The two existing injection pumps are Wheatley plunger types with 3-in. strokes. Each is driven by V-belt off a 30-hp. electric motor. J&L used rubber hose connections between the suction header and injection pumps and between discharge lines and discharge header to dampen vibration.

Critical areas and equipment that can't take submersion are either elevated or rendered impervious to river water.

The plant site is 8 ft. above surrounding terrain. The pond dykes, after being flooded at 7 ft. high, are now 8 ft. high.

Pump jacks and electric control boxes for producing wells are on stilts at various levels (left picture, above), depending on the well distance from the river bed.

Wellhead connections for the injection wells are water-tight.

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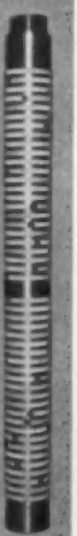

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What's New / IN PRODUCTION

Four years of attention equal to that given to the Northwest Territories in recent years should settle once and for all the petroleum production possibilities of Canada's maritime provinces, says H. L. Cameron, of the Nova Scotia Research Foundation.

He believes that the Maritimes are unique among Canadian provinces in that they have been completely geologically surveyed.

They offer two petroleum possibilities he says: the Mississippian Horton and Windsor groups, and the Triassic-Cretaceous groups on the Continental shelf.

Cameron's remarks were made before the third Western Canada regional meeting of the American Assn. of Petroleum Geologists and the Alberta Society of Petroleum Geologists, held last week in Banff, Alberta.

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Approximately 16% of the 412 gas fields and producing areas in Alberta are affected by hydrogen sulfide precautions just ordered by the Oil & Gas Conservation Board.

The precautions, which apply to all wells and tank batteries where the hydrogen sulfide content exceeds 5%, are intended to increase protection against rupture or leaks in the casing or well head, and to reduce the hazard of releasing hydrogen sulfide into the atmosphere.

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Federal lease regulations now require that simultaneous offers for leases be accompanied by negotiable remittances covering advance lease rentals rather than personal checks.

Under the new rules, only cash, money orders, certified checks, bank drafts, or bank cashier's checks will be accepted.

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Christiana Oil Corp. is joining Sunset International Petroleum Corp. in residential, industrial, and commercial development of a 12,000-acre tract near Sacramento, Calif.

To get the 50% undivided interest in the land, Christiana paid $450,000 to Sunset and has 90 days in which to complete the transaction.

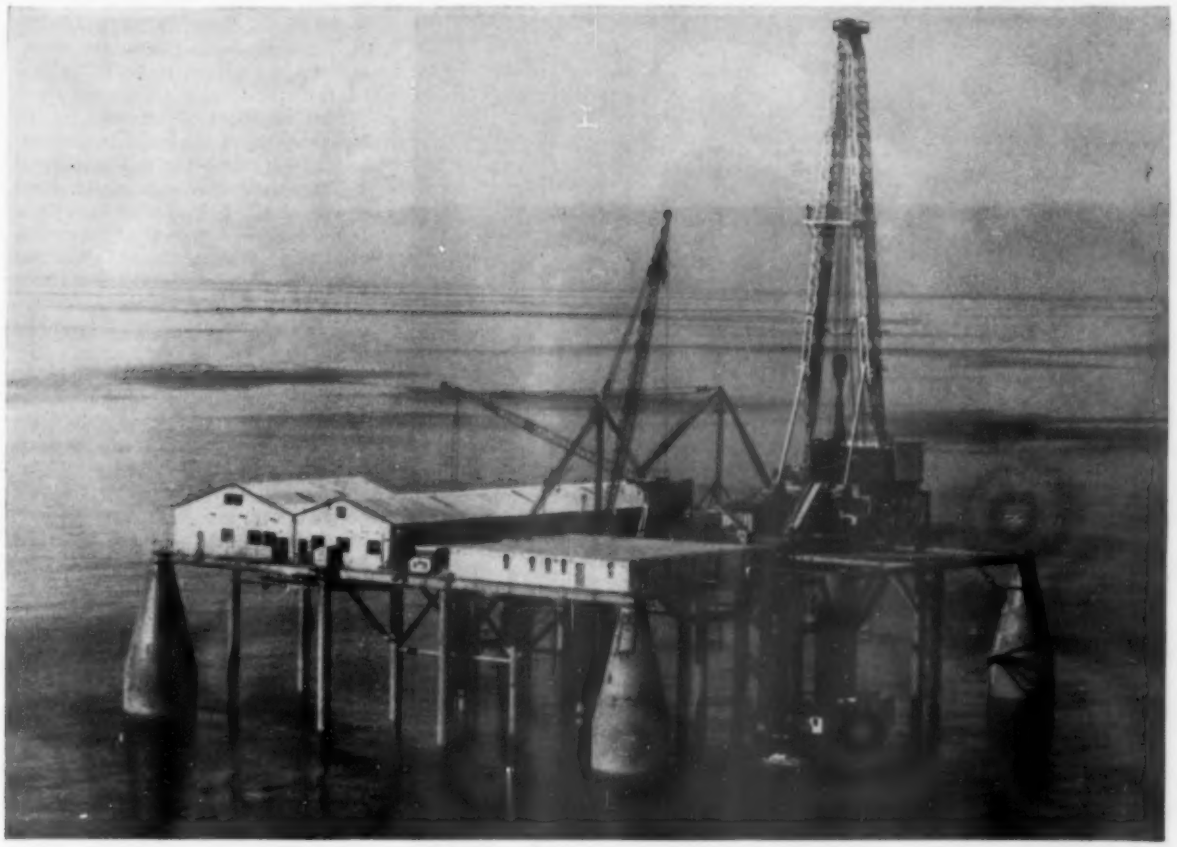
•

Allowables for the Kansas portion of the Hugoton gas field continue at a higher rate than desired by pipeline companies.

Proration orders for the six-month

Salt Water Pit Has Butyl Rubber Lining

Nearly 6¼ mi. of seaming was required to join sheets of butyl rubber as a lining for this 7½-acre salt water pit at a Mobil Oil Co. installation at Hull, Tex. The butyl sheets, which are 20 ft. wide, 230 ft. long, and 3/32-in. thick, were laid by Carlisle Corp. The pit is 1,400 ft. long, 230 ft. wide, and 12 ft. deep, and will hold 400,000 bbl. of salt water.



Electro-Motive power sets drilling record . . .

Kermac 46 hits 10,000 feet in 4 days, 22 hours

Kermac 47 strikes same depth in 5 days, 18 hours

Using three Electro-Motive 900-hp generating units to power electric drive motors on draw works, rotary and mud pumps, Kermac 46, drilling for Gulf Oil Corp., cut the established 10-day drilling record in half. This was accomplished by using heavy bit weight and high rotary speed.

Rotating at 150 to 275 rpm, rotary speed was slowed by adding weight to the bit rather than reducing rotary power. In spite of heavy loading, only five bits were used.

Direct current motors on Electro-Motive equipment are series wound, a factor that makes possible smooth and rapid acceleration of loads with positive control of speed and torque. Thus, accurate control of horsepower can be maintained over a full range of rotating speeds. Simple, single-cabinet controls provide the driller maximum flexibility in power distribution to shorten drilling time, lower costs.

This same drilling method of high rotary speed and heavy bit weight was utilized on Kermac 47 when it reached 10,000 feet in 5 days, 18 hours.

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period ending Sept. 30, just published by the commission, show the allowable for this period to be 191-billion cu. ft.

This is about 4⅓-billion cu. ft. higher than the pipeline company nominations total for this period.

The same commission report shows that there is a difference of more than 154-billion cu. ft. of gas between what the commission would allow and what the pipeline companies have taken from the field since court battles started over boosted allowables in 1956.

The commission says that, during 1959, the principal purchasers in the field took gas at a lesser rate from Hugoton in proportion to their reserves there than they did elsewhere.

The commission also says that the purchasing companies' markets have increased considerably over the past few years, and that Hugoton has not received its fair share of these additional markets.

•

Anaconda Lead & Silver Co. is acquiring the assets of Rocket Petroleum Co., including some 40 producing wells and some 400 acres of mineral leases.

The wells are in Wilson, Archer, and Young Counties, Tex., and the leases are in Rio Arriba County, N. M.

The transaction calls for Anaconda to trade some 2,438,816 shares of common stock on a four-to-one basis for the Rocket stock.

•

Colorado's monthly sale of oil and gas leases drew bonuses totaling $34,427 for some 30,552 acres.

Highest bid at the sale was $12.50 per acre for a 320-acre tract in section 25-4n-60w near Onyx field, Morgan County, offered by W. C. McBride, Inc.

Some 73,083 acres were offered.

•

Schlumberger Well Surveying Corp. has introduced a shaped-charge perforating package for perforation of wells with high downhole temperatures.

The equipment is designed to fire with full power after exposure to a temperature of 430F for one hour. It's already been used in two high-temperature wells in southern Louisiana at levels below 17,000 ft.

Schlumberger says the new explosive package represents a further development of equipment with which the company has successfully perforated three "hot" wells in West Texas

and the Texas Gulf Coast. Temperatures in these wells ranged from 370F to 386F.

The improved performance of the equipment stems from additional research, and redesign of each element of the charge, by Schlumberger's associate company, Societe De Prospection Electrique.

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Drilling Highlights

South Louisiana—Union Texas Natural Gas Corp. et al No. 1 State Lease 3426, section 24-13s-12e, Assumption Parish, was dually completed in the Miocene for 193 b/d of 41-gravity oil through 10/64-in. choke and perforations at 13,136-44 ft., and for 216 b/d of 34-gravity oil through 9/64-in. choke and perforations at 13,222-46 ft. The well is 4½ mi. northeast of Lake Verret field.

West Central Texas—Charles F. and Roy L. Harding No. 1 Fay Cox, section 662, TE&L survey, Stephens County, was dually completed for 142 b/d of 40-gravity oil through 24/64-in. choke and perforations at 3,571-91 ft., 3,605-07 ft., and 3,729-37 ft. in the Caddo, and for 1,412 b/d of 43-gravity oil (based on 6-hour flow of 353 bbl.) through 20/64-in. choke and perforations at 4,390-404 ft. in the Mississippian. The well is 2 mi. northwest of Eloise Kay (Mississippian) field.

Wyoming—Davis Oil Co. No. 1 O'Connor, section 30-52n-69w, Campbell County, recovered 5,200 ft. of oil, 465 ft. of slightly mud-cut and heavily gas-cut oil, and 281 ft. of heavily mud-cut and gas-cut oil on 3-hour drillstem test in the Muddy formation. The wildcat is 9½ mi. northeast of Rozet field.

East Texas—Jack L. Phillips No. 1 A. R. Scharmaegel, C. Lindsey survey, Panola County, was completed for 3.6-million cf/d of gas with 28 bbl. of 58-gravity condensate per million through perforations at 6,697-702 ft. in the lower Pettit. The discovery is 3 mi. west of Carthage field.

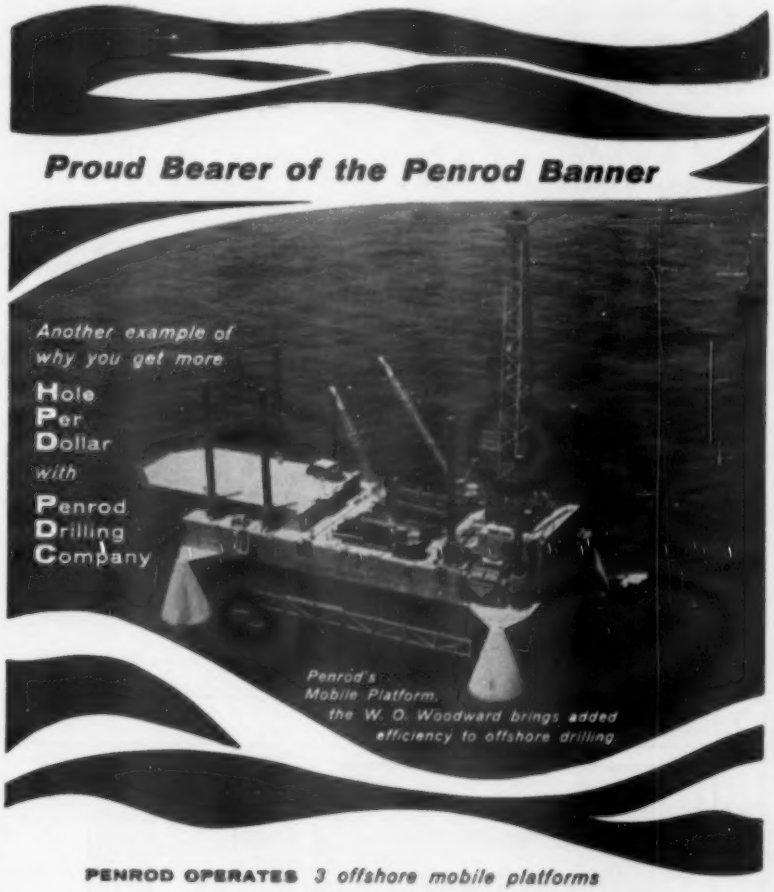
Oklahoma—T. K. Hendrick No. 1 Sleeper, section 22-6n-11e, Texas County, was completed for 20-million cf/d of gas on open flow through perforations at 3,059-120 ft. in the Topeka. The well is 2½ mi. east of Northeast Carthage pool.

Nebraska—Burch Drilling Co. No. 1 Nikes, section 13-2n-27w, Redwillow County, recovered 1,146 ft. of oil, 240 ft. of muddy oil, and 14 ft. of oily mud on 2-hour drillstem test at 3,248-3,302 ft. in the Pennsylvanian. The test is 7½ mi. east of Ackman field.

New Mexico—Sinclair Oil & Gas Co. No. 65-B Turner, section 20-17s-31e, Eddy County, flowed 43-gravity oil at the rate of 288 b/d through 16/64-in. choke and perforations at 7,120-32 ft., 7,136-40 ft., and 7-144-52 ft. in the Abo. The deep-zone discovery is in the shallow Grayburg-Jackson field, 12 mi. west of the Abo discovery in the East Maljamar field.

Also in Eddy County, Shell Oil Co. No. 1 Henshaw Deep Unit, section 24-16s-30e, flowed gas at the rate of 4.5-million cf/d with 32 bbl. of condensate per million through perforations at 11,680-864 ft. in the Devonian. It is in the shallow Henshaw field, 5 mi. south of Devonian production in Lucky Lake field.

Utah—DeKalb Petroleum and Texaco Inc. No. 2 Uintah Unit, section 35-10s-20e, Uintah County, was completed for 2.2-million cf/d of gas on open flow through perforations at 5,063 ft., 5,071 ft., and 5,606 ft. in the Wasatch. It is 5½ mi. southwest of the operators' No. 1 Unit.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DEPT/Marketing

Mobil Tries Price Plan in Northwest

Mobil Oil Co. has just extended its new pricing plan to the West Coast, introducing it to the Puget Sound region in Washington.

Earlier, Mobil had tried the plan in lower Wisconsin, after first inaugurating it in the East late last year.

One important part of the Mobil price plan is the establishment of much broader pricing areas than had been used in the past.

In Washington, all Mobil dealers in Seattle, Tacoma, and Everett, for example, are given the same tankwagon price.

In total, there are only five trading areas covering the eight counties around the Puget Sound.

With such broad pricing regions, Mobil seeks to alleviate the problems of the "fringe" dealer: These are dealers who are located near enough to price war zones to suffer a loss of gallonage to them, but not near enough to receive a reduced tankwagon price from their suppliers.

The other important aspect of Mobil's plan is the complete elimination of tankwagon allowances to dealers, including operators on post-exchange outlets.

Such allowances have been common in depressed pricing areas such as Seattle, where suppliers attempt to protect their dealers against price wars.

But instead of protecting dealers, these allowances actually hurt them, contends Harry A. Bade, Jr., general manager of Mobil's West Coast marketing division.

Many marketers agree. It is their feeling that the dealer is more inclined to lower his pump price substantially below prevailing levels if he is reasonably certain that his supplier will protect him.

Mobil first introduced its pricing plan in New England in October, 1959, placing comparatively wide zones under the same tankwagon price. At the time, New England marketers were being plagued with price instability that was to drive tankwagon prices in Boston, for example, down to 9.9¢ per gal. (chart).

As conditions in Massachusetts grew progressively worse, Mobil cut its tankwagon prices uniformly—not only in the depressed areas—but all across the state.

This wide-area pricing pattern was also adopted by Mobil in other regions throughout New England.

Mobil's New England pricing experiment has apparently contributed to the over-all stability that has returned to the region.

Although still low when compared to a year ago, the improved prices in the region have allowed many marketers, including dealers, to become cautiously optimistic about the future driving season.

Much of the optimism is based on the way competing suppliers have apparently discontinued tankwagon allowances in the region.

Trouble spots do exist, however, according to Fred Moore, executive secretary of the Massachusetts Dealers Assn. But for the most part, he says, they are caused by dealers who elect to work on reduced margins (without supplier support).

In January, Mobil extended its wide-area pricing plan to New York State, where it has met with only moderate success.

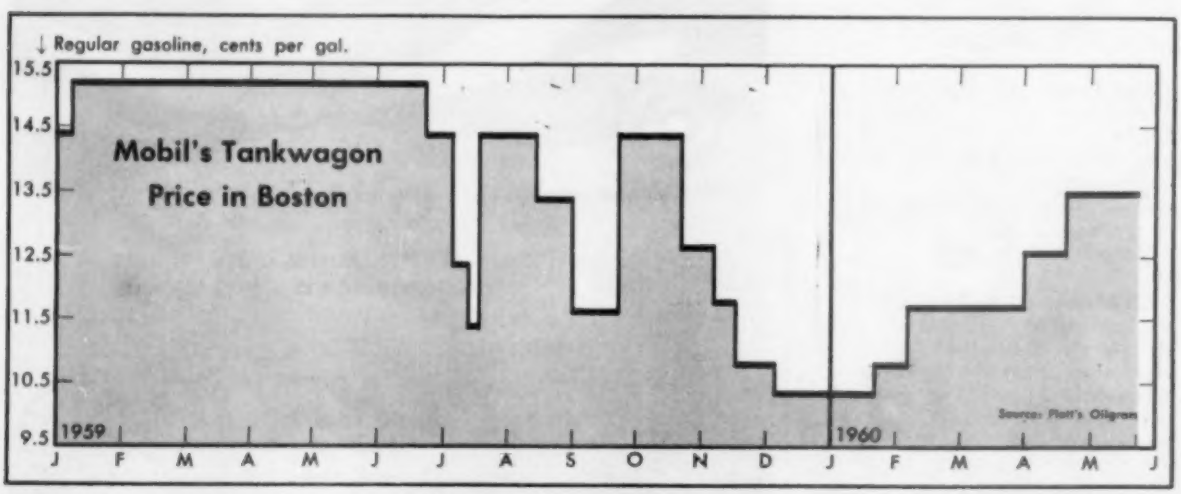
Soon after Mobil introduced its plan there, price weakness developed, forcing the company eventually to lower its 16.4¢ price in the Albany zone to 12.9¢. Similar reductions occurred in other zones in the state.

In April, a slight recovery enabled Mobil to post higher tankwagon prices. (In the Albany region, Mobil posted 13.8¢, which lasted for about a month). But in May, instability developed again, forcing Mobil to reduce its wide-area prices to lower levels.

A competing marketer, who has high praise for the Mobil plan, told PETROLEUM WEEK that he is confident that this recent decrease does not suggest a basic weakness in the plan.

This confidence is echoed by John Nerlinger, executive secretary of the National Congress of Petroleum Retailers.

"Basically, we applaud the plan," Nerlinger told PETROLEUM WEEK. "We hope that this is a trend, and that other suppliers will now move in this direction."



MOBIL'S NEW PRICING PLAN was introduced in New England on Oct. 26, 1959. But not until December was the downward trend in prices arrested. The critical Boston market (which now includes the eastern third of Massachusetts) hit a low of 9.9¢.

What's New / IN MARKETING

The feasibility of a periodic national report of wholesale gasoline sales is being pilot-tested by seven marketers on the West Coast.

The one-year test, now in its final quarter, would show total branded wholesale sales for 16 West Coast markets. A subtotal of sales to government accounts will be shown separately.

Historically, it has always been difficult to obtain data on wholesale sales, because of the indefinite territory encompassing various wholesale markets.

For this reason, the West Coast was chosen for the test. All test markets were easily segregated from each other, and none except the Portland (Ore.) area crosses state lines.

Ethyl Corp. is coordinating the test data for the API Market Research Committee.

•

Oil company representatives in Detroit are disturbed by reports that Ford Motor Co. will recommend a 6,000-mi. oil drain for its Continental next year. But Ford says there is little reason to worry.

A 6,000-mi. oil change recommendation is still under discussion for the Continental, as part of a proposed 30,000-mi. guarantee. However, present thinking leans toward maintaining a 4,000-mi. interval, says Ford. Reason: Market research surveys indicate that motorists who can afford to buy the $7,000 Continental aren't impressed with long oil drain intervals.

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Sun Oil Co. has completed "quite a bit of mathematical work" in its project to find the optimum number of pumps for service stations, according to Dr. James S. Cross, manager of statistical research.

In this work, Sun is attempting to resolve two variables: The loss of sales that results from having too few pumps at service stations, and the high cost of fitting out stations with too many pumps.

Empirical studies of service station operations have shown, says Cross, that both automobile arrivals and the amount of time it takes to service an automobile can be described by probability distributions.

This justified the application of the queueing or waiting-line theory to a model of service station operations," he says.

•

The American Gasoline Dealers Assn. is working with the Brand Names Foundation to help branded dealers compete against private-brand stations that post cut-rate prices.

Through cooperation with the foundation, the dealer group plans to create a kit for its dealers that will contain advertising aimed at promoting the products and services of branded stations. AGDA feels that it is futile for these dealers to try to combat unbranded outlets on the basis of price.

•

A service station dealer in Buffalo, N. Y., was convicted and fined last week for illegal display of a price sign. It was eight feet high.

The sign carried the words "bulk oil" in 2-in. letters, but the dealer admitted that he also sold gasoline at the same price (26.9¢ per gal.).

"From my experience as an attorney," the judge told the dealer, "I know these gas companies have you pretty well under their thumbs. You have to keep up with competitors' prices that go round and round. But subterfuge has been proven in this case." Fine: $10.00.

•

At Standard Oil Co. (Ind.), electronic scanners will "read" credit-card invoices and translate and record the data on punched cards.

Indiana Standard has purchased the scanners from Farrington Mfg. Co., becoming the tenth oil company to adapt the electronic reading machines to its credit card billing system.

Previously, Indiana Standard has converted customer invoices by hand.

•

Premium gasoline averaged 99.4-octane last month, and regular averaged 92.5-octane, according to Ethyl Corp.

Premium was unchanged from April, but 0.3-octane above a year ago. Regular showed a 0.1-octane gain, over April, and a 0.7-octane rise over the year before.

Fuel Oil Men Seek Research Fund

Oil heat marketers are preparing to present a request for $500,000 to the API Board of Directors in October.

The funds would be used for the first year of a fuel oil research program, which was recently approved by API's Marketing Division.

"I'd like to take my group away somewhere to work on this," says C. J. Livingstone, chairman of the Technical Advisory Group of the API Fuel Oil Research Committee.

Livingstone told PETROLEUM WEEK this week that his eight-man committee may be enlarged for the task of preparing for the Board meeting.

When the marketers submit their request for funds to the API board, they expect to have a detailed list of research projects on which the funds will be spent.

David W. Locklin, of Battelle Memorial Institute, has submitted a list of 49 proposed projects, as part of his work as coordinator of the API study of research needs.

These projects include a study of combustion fundamentals, and study and development of burner concepts, new products, residential installations, and new uses for fuel oil.

From Locklin's report, Livingstone's group hopes to schedule the projects and assign them tentatively to various laboratories. Much of the research will be delegated to major oil companies.

The $500,000 will be used to obtain the services of outside research firms that will be able to complete the program.

Locklin suggested 16 projects that he feels should be commenced during the first year of the program. But it has been proposed that any decisions the Technical Advisory Group makes on this list be first approved by the general committee of the API Marketing Division.

API marketers hope to get the program under way by Jan. 1, 1961.

Aluminum Useful in Fight on Corrosion

Aluminum can be used in refineries to combat corrosion, and for many applications is superior to brass or alloy steels, one major refiner has found.

After ten years of experimentation with aluminum in four of its refineries, Sinclair Refining Co. has come to the conclusion that aluminum is not the highly unpredictable metal some people believe it to be. R. L. Hildebrand, of Sinclair's Harvey (Ill.) laboratories, showed the economic justification of using aluminum in certain specific refinery locations at a recent corrosion session of API's Division of Refining.

The poor opinion many refiners have had of aluminum, Hildebrand said, resulted from early test work "where the metal failed rapidly under conditions which we would now consider misapplications."

Sinclair intensified its use of aluminum because of its successful showing, and now has 49 aluminum condenser-tube bundles in service, Hildebrand said.

Aluminum tubes can be used in a great many overhead condensers and coolers operating below 300F.

In many cases steel tubes are unsatisfactory in such equipment, Hildebrand pointed out, because of corrosion on the cooling-water side.

"The use of aluminum should be considered in such cases," he suggested, "before more expensive alloy tubes are bought."

He recommended the use of aluminum in the following locations:

• Fluid catalytic cracking units. Aluminum stands up well against the concentrations of hydrogen sulfide and ammonia that are present in these units, and the temperature is generally low enough to favor its use. The inside of the tubes are clad with an aluminum alloy containing 1% of zinc, to give the system some cathodic protection.

Aluminum tube sheets, tie rods, and baffles must be used to avoid bimetallic corrosion, Hildebrand warned.

Length of service of such aluminum condenser bundles varied from 39,000 to over 50,000 stream hours in one of the company's East Coast refineries.

• H2S removal equipment, such as amine strippers, exchangers, and coolers. Both brass and steel tubes failed after 10 months of service in the dimethanol amine regenerator stream of a polymerization unit. Aluminum bundles have now been in service over 8½ years in that unit and are still in good condition. Minor cleaning on the water side is the only maintenance required.

In some glycolamine exchangers, aluminum tubes without cladding are used, because these exchangers are not contacted by cooling water.

• Condensers in foul-water strippers for pollution control. A typical analysis of the water to which the condensers may be exposed shows about 3,200 ppm. of sulfides, 2,500 ppm. of ammonia, 550 ppm. of phenols, and a pH of 8.5. These aluminum tubes show heavy external corrosion after about two years of service. Some have been in service as long as 53 calendar months in Sinclair's East Coast and Great Lakes refineries.

• Condensers and coolers in methyl-ethyl-ketone plants. Aluminum should give good service in solvent refining of lubricating oils. No maintenance other than cleaning on the water side with an air-and-water lance has been required during nearly two years of service, Hildebrand reported.

• Light hydrocarbon and petrochemical units. Where pressures are not excessive, such services are "made to order" for aluminum, Hildebrand said.

Several condenser bundles have given satisfactory service in cat reforming fractionators and in reformate stabilizers in four of the Sinclair refineries.

Aluminum is economical compared to other special metals, Sinclair found.

It costs roughly 30% more than carbon steel, about half as much as brass or Admiralty metal, and one-third as much as stainless steels such as Type 304.

There are applications, however, where aluminum is not recommended.

. . . But Above 300F, Use Stainless Steel

For heat exchangers operating at temperatures above 300F, seam-welded stainless steel tubing, without any heat stabilizing treatment, seems to give the most economical anticorrosive service.

At the recent conference of the National Assn. of Corrosion Engineers, Sinclair Refining Co.'s engineer F. J. Bruns reported on the results of extensive tests conducted for the purpose of evaluating the corrosive resistance of eleven commercial alloys.

The samples were exposed for 3,840 hours to the hot effluent stream (615F) from a straight-run naphtha desulfurization unit. The degree of corrosion was determined by weight loss and by microscopic examination.

Here's what Sinclair found:

• Manganese-substituted stainless steels show slightly better resistance to high-temperature hydrogen sulfide than conventional nickel steels.

• A thermal stabilizing treatment at 1630F increased the rate of corrosion of all of the austenitic stainless steels tested.

• Seam-welded 304L stainless steel, welded without any further treatment, came out way ahead.

But the presence of certain chemicals must be avoided.

Stress corrosion of stainless steel takes place in the presence of chlorides, tests indicate.

The mechanism of such an attack was explained by A. V. Alessandra and Norton Jaggard, of Arabian American Oil Co., at the recent API corrosion session.

Stainless steels, they pointed out, obtain their corrosion resistance from an impermeable oxide film, which is readily formed in oxidizing media. When exposed to hydrochloric acid, the oxide film is removed, even with an efficient inhibitor present, and metal attack takes place.

In the presence of tensile stresses, this causes "stress corrosion cracking." The amount of chlorides necessary to start the attack can be relatively small, the Aramco engineers said—as low as 50 ppm.

Low caustic concentrations at temperatures above 300F can also start stress corrosion cracking of stainless steel, they warned.

This is particularly true in the following cases:

- Where temperatures above 300F are encountered (box, page 42).
- Where hydrochloric acid and chloride salts are present. Salts in crude oil, for example, would cause rapid corrosion of aluminum in crude processing units. And because ammonium chloride is corrosive to aluminum, neutralization with ammonia is of no avail.
- Where aluminum would be subjected to caustic attack, which it cannot resist.
- Where heavy metals are present, such as mercury, copper, cobalt, lead, or nickel. In such applications, pitting of aluminum will occur—although in certain cases a continuous injection of an organic corrosion inhibitor may retard this pitting.
- Where there is galvanic action, caused by coupling aluminum with brass, copper, lead, or Monel. Here, again, pitting and loss of metal will occur.

Use of Plastics Soars in Construction

But the potential market for petrochemicals in this field has barely been tapped, chemical marketers say.

The use of petrochemical products in the construction industry is increasing rapidly. Yet many chemical marketers believe they have hardly scratched the surface of the potential market.

This was the main conclusion of the recent meeting of the Chemical Market Research Assn., in New York.

Petrochemicals have hundreds of applications in today's housing industry, not only as building materials but in the form of appliances and for decorating purposes. They include such products as plastics—by far the largest volume—elastomers, and synthetic fibers.

About 23% of all the plastics produced today are used for construction purposes, according to an estimate presented at the CMRA meeting by Monsanto Chemical Co. It based its figures on the U.S. Tariff Commission's preliminary statistics for 1959.

This represents a total of over 1¼-billion lb. of plastics, of a total of over 5.6-billion lb. produced in 1959.

The dollar value is approximately $300-million, out of total plastic sales of $1.3-billion.

Monsanto's report covered such items as flooring, wall tile and other coverings, panels, plywood and hardboard components, wire coatings and wiring devices, piping, and plumbing and lighting fixtures.

This substanial quantity of plastics, however, represents only 2% of the materials used by the construction industry.

The construction market considered in the Monsanto report consists of highway, utility, residential, and nonresidential construction. Farm construction is excluded.

The construction industry accounts for an estimated $72-billion of the country's gross national product. Of that total, Monsanto estimates, $15-billion represents primary construction materials. The $300-million worth of plastics that figures among these primary construction materials—2% of the total—shows how little the industry has penetrated this market.

All signs point to an accelerated rate of use of plastics in construction, according to R. W. Finholt, of General Electric Co.

"The basic motivation behind this tremendous increase," he told the CMRA meeting, "is the increased cost of steel, and the increased cost of the labor that it takes to make things out of steel. This contrasts with a steadily decreasing cost of plastics, and a decreasing cost in the amount of labor that it takes to make an item out of plastic."

Plastics manufacturers should beware, however, of making exaggerated or premature claims for their products, according to several of the CMRA speakers.

"Nothing could give the chemical industry a blacker eye, and one that might last a long time," warned Prof. C. T. Larson of the University of Michigan, "than for the plastics producers to rush pell-mell into the building market with components that won't be able to stand up against weather and climate, or that otherwise fail to live up to expectations. It has happened in the past, and it has made architects and builders tough customers to sell."

And Melanie Kahane, past president of the American Institute of Decorators, reviewing the enormous potential for the application of plastics, elastomers, and synthetic fibers in office and home decoration, warned the CMRA audience against the danger of making the consumer part of an "experiment" when getting new products on the market.

She also decried the fancy claims made for many of the end products of the industry, the many different trade names used for newly identical products, and the copious use of chemical terms that are unfamiliar to the layman.

Most Plastics Are Used in Construction

Every major type of plastic made is used in some way in the construction industry. Here are Monsanto Chemical Co.'s estimates of the amounts of the various plastics used in construction, compared with total production (figures in millions of pounds):

Type of Plastic	Total in Construction	Total Produced	Percent in Construction
Acrylics	12	139.1	9%
Melamine & Urea	105	399.9	24
Phenolics	183	585.4	31
Polyester	22	152.5	14
Polyethylene	149	1,203.6	12
Styrene	141	932.5	15
Vinyl	254	1,151.9	22
Petroleum polymers	190	259.8	73
Alkyds	239	383.1	62
Rosin-modified paint	24	140.7	17
Others	—	319.1	—
Total	**1,319**	**5,667.6**	**23%**

'62 COULD BE THE YEAR FOR YOU!

how to make octanes come clean . . .

Most refiners these days are called upon to make relatively high-octane motor fuel to meet current market demands. But high octanes alone are not enough. Motorists also want gasoline that burns clean!

By means of new and improved processing techniques it is now possible to produce high-octane blending components that give you the kind of gasoline motorists want. In addition to high-octane rating, these components possess excellent combustion and performance characteristics especially tailored for modern high compression ratio engines.

In order to help refiners realize their maximum potential, UOP makes available the wide variety of processes described on the opposite page. UOP technical, economic and market specialists are also available to help you determine which will best meet your existing and future needs. Ask us for a preliminary proposal, at no obligation.

INFORMED OPINION indicates that 1962 will require a substantial increase in process capacity . . . NOW is the time to start your planning!

UOP UNIVERSAL OIL PRODUCTS COMPANY
30 Algonquin Road, Des Plaines, Illinois, U.S.A.

WHERE RESEARCH TODAY MEANS PROGRESS TOMORROW

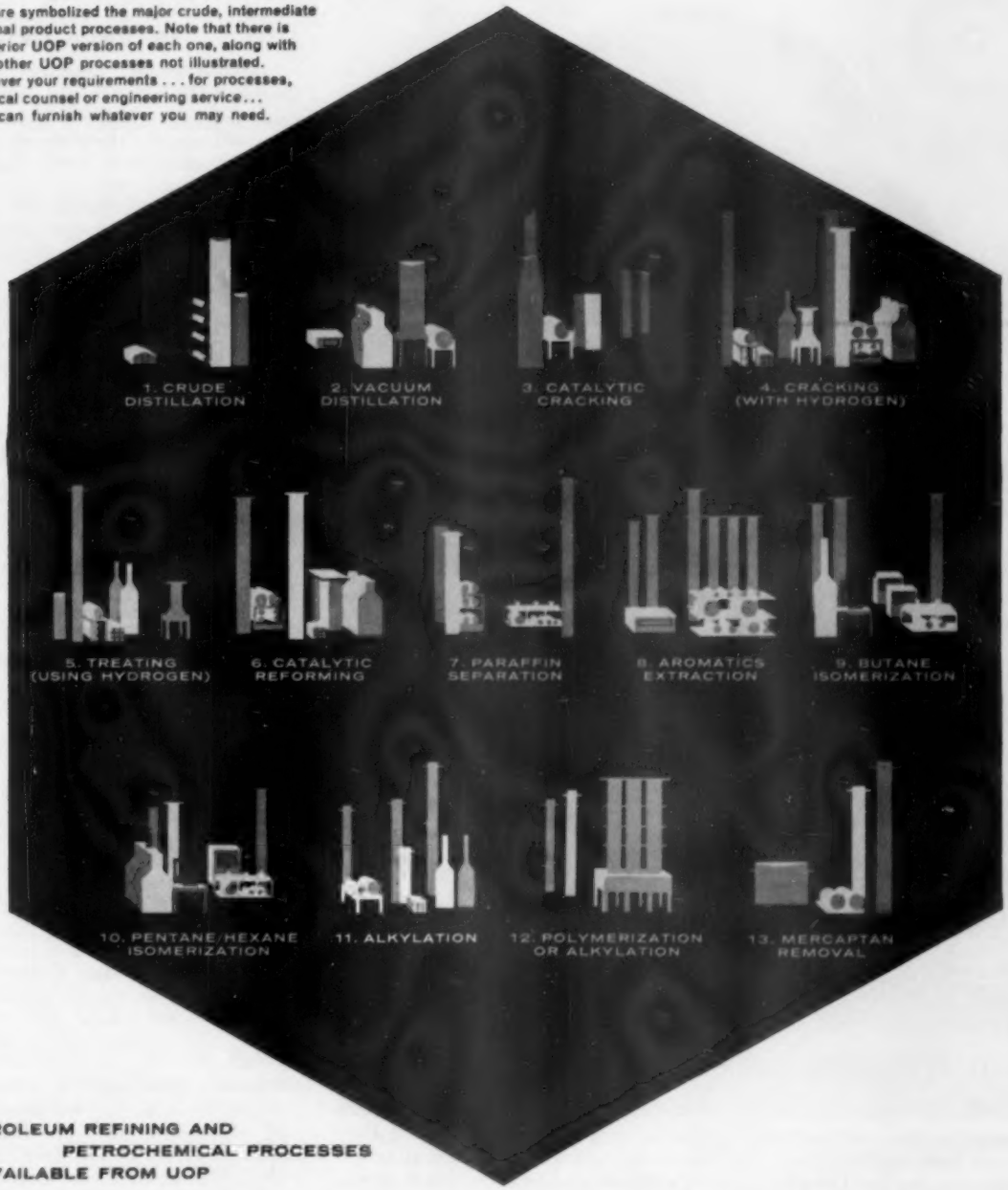
"HF" ALKYLATION

Here is a catalytic process that enables the refiner to produce an isoparaffin fuel component that burns with a minimum of carbon deposit . . . greatly reduces surface ignition and consequent rumble . . . is ideally suited to today's high compression auto engine.

Developed and licensed by UOP, "HF" Alkylation combines olefins such as propylenes, butylenes and amylenes with isoparaffin, usually isobutane. The component thus formed, alkylate, is a mixture of branch chain hydrocarbons of higher molecular weight. It is widely used in producing high octane aviation gasoline, as well as an anti-rumble component in motor fuel.

An ideal companion process to "HF" Alkylation is the UOP Butamer™ process for producing isobutane.

Here are symbolized the major crude, intermediate and final product processes. Note that there is a superior UOP version of each one, along with eight other UOP processes not illustrated. Whatever your requirements . . . for processes, technical counsel or engineering service . . . UOP can furnish whatever you may need.



PETROLEUM REFINING AND PETROCHEMICAL PROCESSES AVAILABLE FROM UOP

1. CRUDE DISTILLATION equipment is designed and engineered by UOP in any desired capacity.

2. VACUUM DISTILLATION and **VISBREAKING**—easy-to-operate processes for preparation of feed stocks for catalytic cracking.

3. FLUID CATALYTIC CRACKING—an improved process that gives higher yields, higher octane numbers.

4. LOMAX™—highly flexible process that converts middle distillates and vacuum gas oils into gasolines and distillate fuels of outstanding quality.

5. UNIFINING™—a modern process that completely purifies petroleum distillates.

6. PLATFORMING® produces high octane gasolines, high purity aromatics.

7. MOLEX™—a new continuous separating process that removes lowest-grade hydrocarbons from gasoline.

8. UDEX®—the ideal process for separation of super-purity aromatics.

9. BUTAMER™—a new and practical process for producing isobutane.

10. PENEX®—a new process that converts light, normal paraffins to isoparaffins.

11. HF ALKYLATION—makes alkylate, top anti-rumble motor fuel. Sulfuric acid process also available.

12. CATALYTIC CONDENSATION—converts olefin fractions of refinery gases into high-quality gasoline and petrochemicals.

13. MEROX™—a new and inexpensive treating process to remove mercaptans from gasolines and light distillates.

PROCESSES NOT ILLUSTRATED:

REXFORMING®—the ideal process to insure your top octane position.

CATALYTIC DEHYDROGENATION—removes hydrogen from hydrocarbons to produce less-saturated hydrocarbons.

HYDEAL™—a new process for the hydrodealkylation of toluene or C_9 aromatics to produce benzene; may also be used for manufacturing phenol and naphthalene.

HYDRAR™—converts benzene to cyclohexane with excellent yields, achieves extreme high purity with Udex grade benzene.

OLEFIN EXTRACTION—efficiently separates olefins and diolefins from paraffins; prepares olefins for further conversion.

AROSORB™—removes heavier aromatics from synthetic and natural distillates, produces aromatic-free heavier distillates.

ALKAR™—produces ethylbenzene, cumene and other alkylated aromatics from Fluid Cat Cracker off-gas streams.

UNISOL®—an economical process for treating high mercaptan-containing gasolines.

IMPROVES REFINERY DIGESTION

A refiner recently asked us to help him reduce some of the expenses of operating his cracking tower. The symptoms were fast erosion of the tower itself, and costly catalyst loss in the form of fines. When Houdry engineers dug into the problem, they disclosed evidence strongly in favor of using a less erosive catalyst.

KAO-SPHERES, Houdry Mineral Kaolin Cracking Catalyst in spherical form, were recommended. It took only a very short period after turnaround to show that the remedy was working. Catalyst loss was much less than before, and the smooth, KAO-SPHERES—because they have no sharp edges—also helped reduce erosion of the tower.

Perhaps our many services—in research, engineering and manufacturing—or our catalysts or chemicals can help you in a similar way.

Why not find out?

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1528 Walnut Street, Philadelphia 2, Pa.
*Houdry means Progress...through Catalysis

What's New

IN PROCESSING

Sinclair-Koppers Chemical Co.'s proposed 70-million-lb.-per-year styrene monomer plant at Houston, Tex., will use a "styrene-from-gasoline" process.

The company says the new unit will recover ethylbenzene in pure form from a mixed xylene stream in one step. This is followed by dehydrogenation, separation, and purification of the styrene.

Badger Mfg. Co., joint developer of the process with Cosden Petroleum Corp., will construct the Sinclair-Koppers plant.

•

Polyethylene can be used as an additive to obtain a desired set of physical characteristics from a finished blend of wax, American Can Co. told members of the National Petroleum Assn. at a recent wax symposium.

The company recommended selecting a wax with a balance of properties nearest those required and adding polyethylene to improve the critical requirements.

•

The chemical wing of the Sohio Research Center at Warrensville Heights, Ohio, will be enlarged in the second expansion project there since the center was built two years ago. Completion date for the latest construction is Nov. 1. The addition includes more laboratory space for research personnel and an expanded administrative section. Cost of the project is estimated at $300,000.

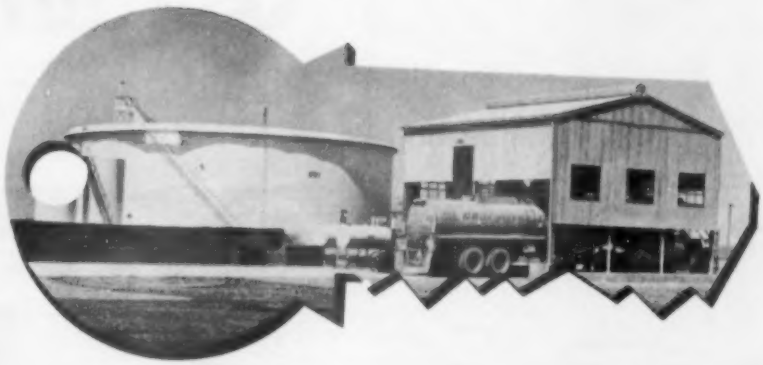
•

Oronite Chemical Co. is expanding its facilities for the production of polybutene at the Richmond (Calif.) refinery of Standard Oil Co. of California, its parent company.

Oronite will build one new unit and expand two existing units. Total cost is estimated at $3.4-million. Scheduled completion date is early 1961.

Polybutene—or polybutylene—has recently been used in many new applications. For example, it is being used as a viscosity-index improver in lubricating oils, and as an impregnating fluid for leather. Its more conventional applications are also spreading, including use as insulating oil in electronics, a softener in caulking compounds, and in pressure-sensitive tapes.

Unattended tank-truck loading terminals are starting to catch on in different parts of the country. Phillips has put one in operation at Pasadena, Tex., on the Gulf Coast, which is . . .



Open to Keyholders Around the Clock

The Gulf Coast's first keystop—or unattended—truckers' products terminal has been opened by Phillips Pipe Line Co., at Pasadena, Tex. It has been enthusiastically received by tankwagon users, to whom the "burden" of loading has now been shifted.

A few such terminals have been installed in recent years in other sections of the country. Standard Oil Co. of California has one near San Bernardino and another near Reno.

Phillips itself, with Sinclair Refining Co. and Continental Oil Co., owns keystops at Burley and Boise, Idaho, which run on a 16-hour basis. Conoco is operator.

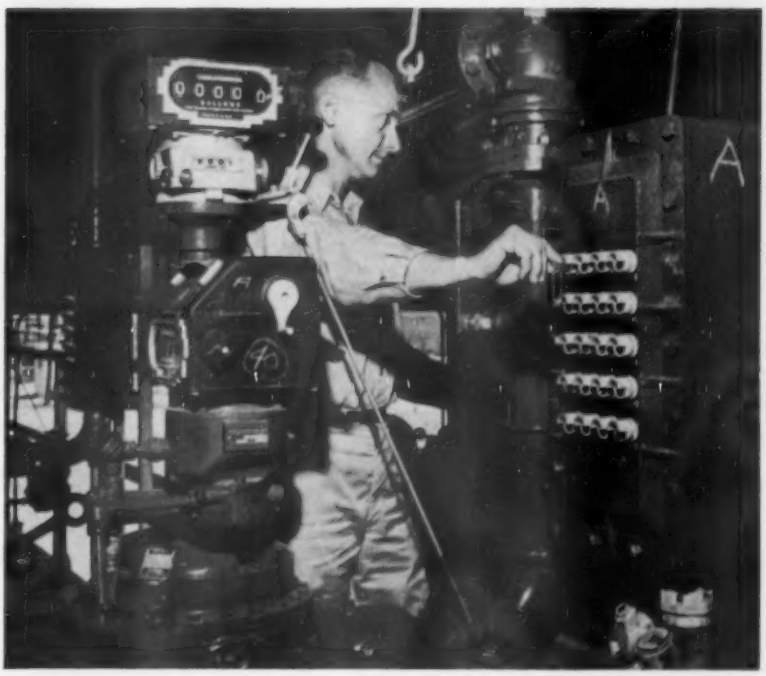
Its Pasadena terminal, however, operates 24 hours. And, Phillips says, few other keystops approach its new installation in degree of automation.

A keystop terminal is one at which the driver himself turns on pumps and meters, with a key, and loads his own truck.

"Our newly inaugurated keystop operation consists basically of providing truck drivers with coded keys which are inserted in meters to register delivery," explains H. T. Hoover, terminals superintendent for Phillips. "With an installation such as this, trucks can be loaded by the drivers, and the terminal left open for continuous business. Trucks can be used around the clock and loaded at a time most convenient for the carrier."

Main reasons the truckmen like the keystop terminal are lack of delays and ease of loading.

"I've loaded at terminals all over the country, and as far as I'm concerned this one will be perfect," asserts M. L. Bagwell, a driver for Groendyke Transport Co., of Houston. "By the time I get my ticket made out, we're ready to go. I'd say it only takes about 15 minutes or so loading time per truck. At some terminals, I've had to sit and wait from two to four hours to load my truck. Mainly, these delays come from having to wait on the terminal personnel to get around to give you your gasoline."



TANKWAGON DRIVER M. L. Bagwell inserts key to turn on meter prior to loading.

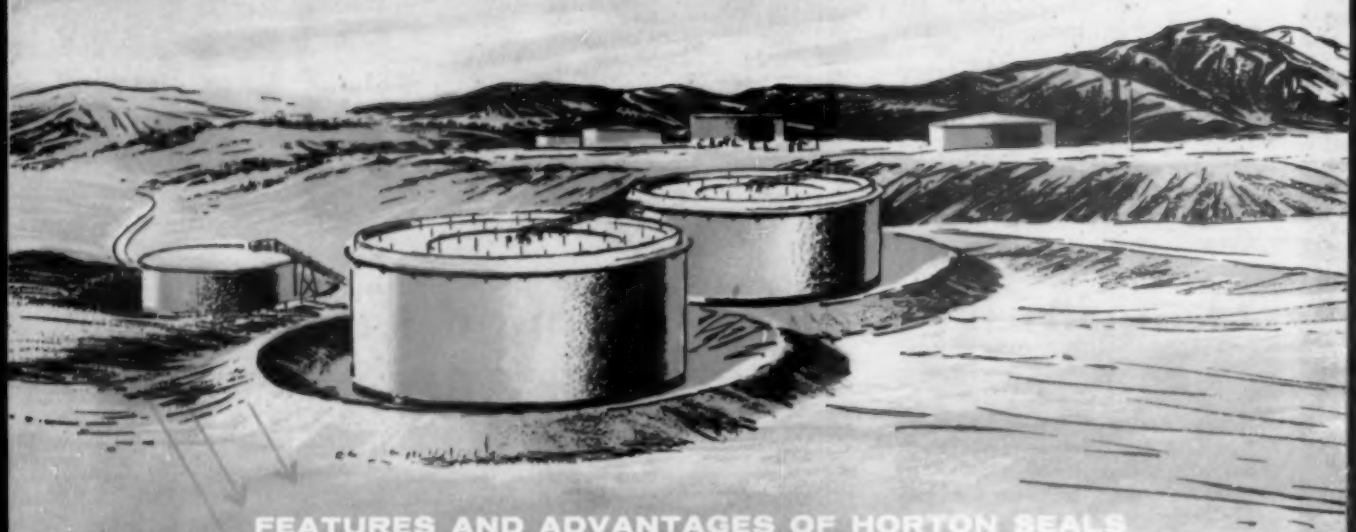
C. G. Sones, of Ada Oil Co., Houston, a Phillips jobber, says, "First, our drivers can get out and load up before heavy traffic in the mornings, or can load up after the peak traffic hours in the afternoon. In addition, we have fire zones in Houston. This means we can only transport into the downtown areas between midnight and 6 a.m. Therefore the terminal will be quite useful."

The terminal is equipped with four meter control stations, two each for regular and premium gasolines, which are mounted on a platform at the loading rack.

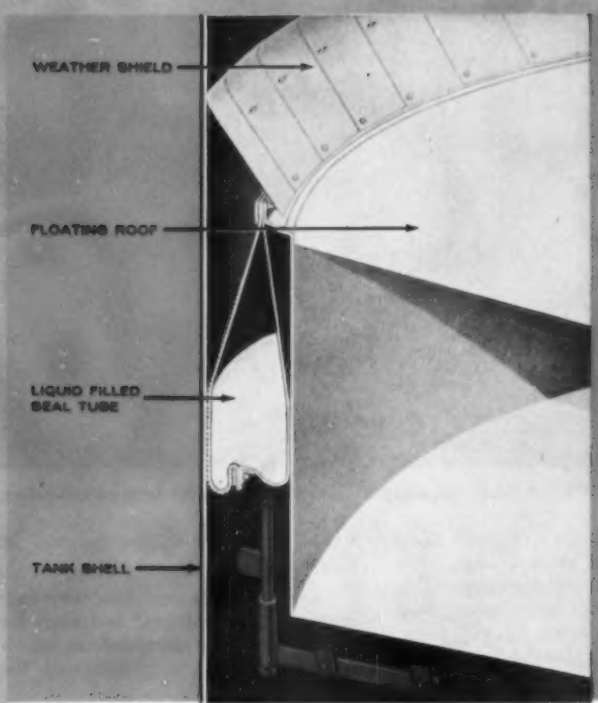
Two meters are required for each product because the installation has a double rack for the filling of two trucks simultaneously. Actually, it would be mechanically possible to load both regular and premium into the same truck at the same time, but this is prohibited by safety regulations.

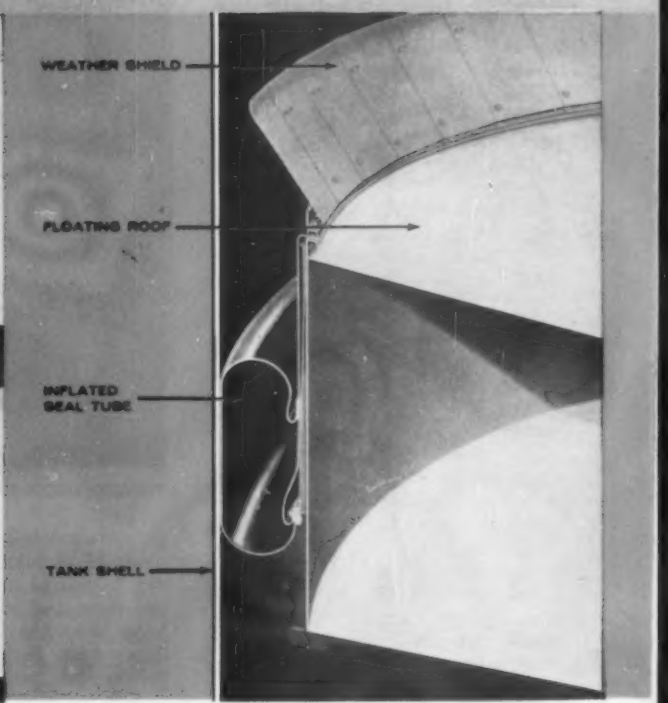
All valves, meters, and loading lines are identified as to product by code

CB&I OFFERS THE



FEATURES AND ADVANTAGES OF HORTON SEALS





SR5 / HORTON LIQUID FILLED FABRIC SEAL

- Sealing liquid holds envelope against tank shell.
- Pressure against shell is greatest at bottom, decreasing to zero at top of contact.
- Flexible ring support provides adequate clearance and better fit for all rim space variations.
- Sealing band and rim band vulcanized at bottom connection.

SR6 / HORTON INFLATED FABRIC SEAL

- Gas holds envelope against tank shell.
- Constant mild pressure, maintained by simple gasholder, over entire surface.
- Positive means of supplying seal gas.
- Maximum clearance to accommodate rim space variations due to badly out-of-round shells.
- Vulcanized to form endless tube.
- Can be serviced from top of roof.

WIDEST CHOICE OF SEALS
for Floating Roof Tanks

More CB&I-built floating roof tanks serve the petroleum industry than the total constructed by all other manufacturers. The reason . . . superiority of CB&I structures in design, construction and performance in reducing evaporation loss, retarding corrosion and minimizing fire hazard.

A key factor has been CB&I's continuous development of close-fitting, long-lasting Horton® Seals, which have set performance standards for the industry. Today, Horton Seals—both metallic and fabric—offer the widest selection of designs available anywhere.

CB&I's extensive experience (since 1922) with all types of sealing designs is at your disposal. For an accurate appraisal of the proper sealing mechanism for your specific storage conditions, call or write the nearest CB&I office.

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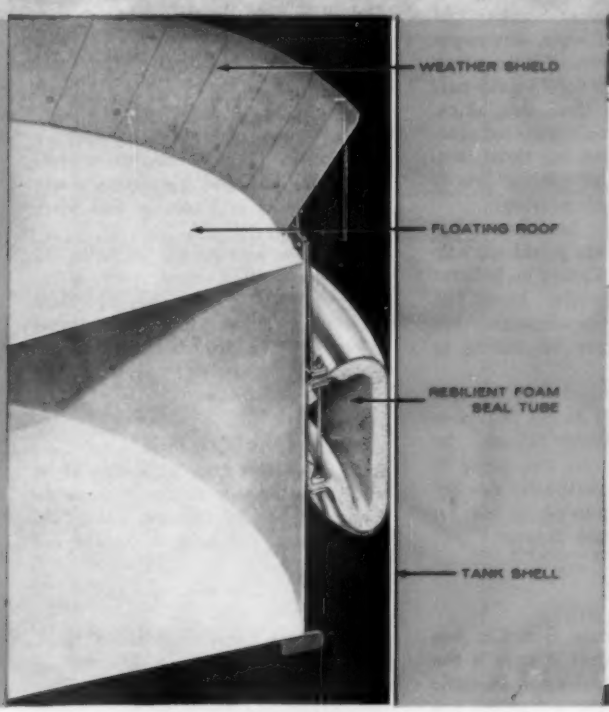
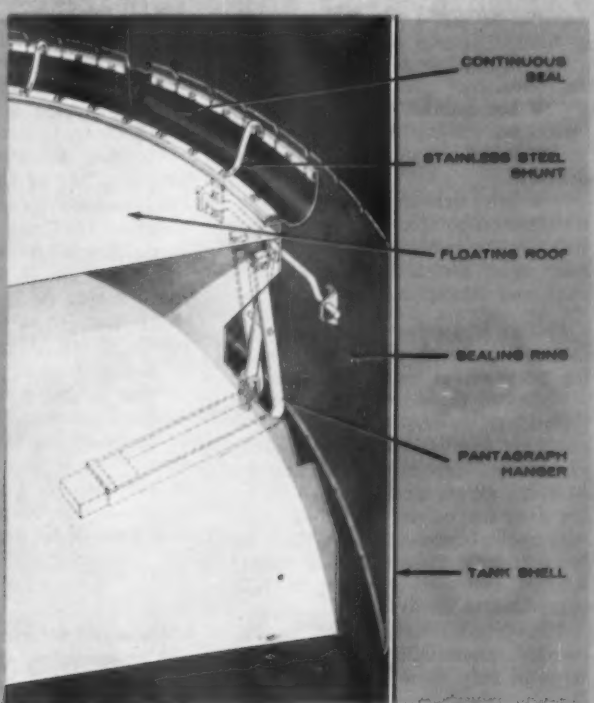
OFFICES AND SUBSIDIARIES IN PRINCIPAL CITIES THROUGHOUT THE WORLD





SR7 / HORTON RESILIENT FOAM FABRIC SEAL

- Resilient foam holds envelope against tank shell.
- Mild and positive pressure against tank shell.
- Maximum clearance to accommodate rim space variations due to badly out-of-round shells.
- Endless sheet covers resilient foam, forming tight envelope.
- Can be serviced from top of roof.

SR3 / HORTON METALLIC SEAL

- Continuous steel sealing ring.
- Pantagraph hangers hold sealing ring against tank shell with minimum pressure.
- Hangers keep roof centered in tank.
- Continuous seal closes rim space.

Horton Floating Roofs are covered by U.S. Patents and pending applications.

P9SCB

letter and color. Premium gasoline is color-coded red and marked by the letter "P." Regular is color-coded orange and designated by the letter "R."

Each meter control station has 20 key slots, which permits assignment of keys to that number of carriers.

Additional slots—in multiples of five—can be added if needed.

Each trucker is given a key for his own switch on the meter control stations to turn on pumps and meters, and another to fit an assigned drawer for deposit of special instructions. The key will operate only his switch on any of the four stations, and no others.

A careful procedure has been worked out by Phillips for drivers using its terminal. Here's what a driver must do:

- Check assigned drawer for special instructions from terminal personnel or from his company's other drivers.
- Insert original and copy of truck loading order and original and six copies of truck loading manifest and bill of lading in time clock and "stamp in."
- Zero gross and net counters on meter.
- Stamp opening meter reading on forms.
- Set amount of product to be loaded on set-stop counter.
- Insert key and turn on to start delivery.
- After delivery is completed, reset counters to zero, turn meter control station switch off, close meter inlet valve, insert all forms in time clock and "stamp out."

Phillips is conducting an informal "school" to teach all drivers operating proceedures and safety rules.

"Most of the drivers, although not skilled in loading petroleum products, are familiar with the handling of gasoline," says Hoover. "With this in mind, we are conducting our training program on an individual basis, with each driver required to load his truck under the observation of trained Phillips personnel until he is fully competent to do so alone."

Hoover adds that it will be "the carriers' responsibility to send to the terminal only those drivers who have been previously instructed."

Safety precautions are elaborate. Before a truck is brought up to the loading rack, the driver must turn off all electrical switches. If his truck stalls at the rack, it must be towed off, as no booster batteries may be used. A ground cable must be connected to the truck before loading.

Automatic switches on each meter stop delivery in the event of malfunction. In addition, a trip switch shuts off all power to the rack, stops the pumps, and sounds an alarm in the fire station of Phillips Chemical Co. a few miles away.

Besides a standard fire hydrant near the rack, there are dry-powder extinguishers with fire blankets at each end of the truck-rack building, a wheeled extinguisher near the rack, and two more smaller ones at each end of the meter platform itself.

The Pasadena keystop is located at a storage terminal and pump station on Phillips' 12-in. line from its Sweeny refinery.

Tank capacity is 80,000 bbl.

Phillips estimates that, initially, average daily keystop deliveries will total some 2,000 bbl. of premium and house-brand gasoline, into 20 to 30 trucks.

Phillips expects to expand its keystop operation if the Pasadena terminal proves successful.

"This is in the nature of a trial balloon for Phillips," says Hoover. "But I think it's logical to assume we'll be incorporating what we learn here in future terminals."

Hoover notes that keystops "are particularly adaptable to smaller terminals, where volumes are not adequate to permit 24-hour manned delivery."

He adds, "I believe keystop terminals should prove particularly valuable to expanding companies, such as Phillips, since they can be used in fringe areas as the marketing front progresses."

What's New / IN TRANSPORTATION

The International Chamber of Shipping, by a 14-1 vote, has registered its opposition to this country's rule that 50% of all foreign-aid cargoes be carried in U. S.-flag ships. The U. S. cast the only negative vote.

The vote was taken on three resolutions critical of the existing law at the chamber's annual meeting.

Ralph E. Casey, American Merchant Marine Institute president, who represented the U. S., says he believes the foreign shipowners' hard line could lead to a requirement that 100% of aid cargoes be carried in U. S.-flag ships.

"One of the reasons why we had confined our request to 50-50 was to be fair with our foreign friends," he notes, "but if they are not going to be fair with us, I personally can see no reason for continuing to ask for only 50% of U. S.-aid cargoes."

•

Colorado Interstate Gas Co. has put in operation what it says is the first remotely supervised automatic compressor station on a natural gas pipeline. The company says the main difference between its automatic supervisory control system and the usual remote control setup is that it regulates all transmission functions, including engine selection.

Control headquarters is at Colorado Springs. From there, the company will remotely operate its Springfield (Colo.) station, on the pipeline that moves gas from Texas, Kansas, and Oklahoma into the Rocky Mountains area.

•

The Air Force's largest underground jet fuel and gasoline storage terminal went into service last week near Martinez, Calif.

The new installation includes 12 tanks, each 40-ft. deep, with a capacity of 83,500 bbl. They are built of prestressed concrete, and are said to be able to withstand an atomic explosion.

•

Peace River Oil Pipe Line Co., Ltd. is completing an extension of its crude line 37 mi. to the Symonette field, west central Alberta. The $1¼-million line will have a capacity of 20,000 b/d.

•

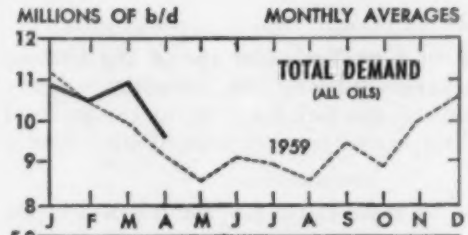
Gas Trunk Lines of British Columbia, Ltd., a new company, is asking authority to build a 30-in. pipeline to connect new gas reserves in northern British Columbia and the line of Westcoast Transmission Co.

Throughput of the 250-mi. line would be about 650-million cf/d.

Westcoast Transmission earlier this spring said it proposed to extend its line to the Northwest Territories, and to date has not announced a change of plans (PW—Apr.15'60,p42).

PETROLEUM WEEK'S

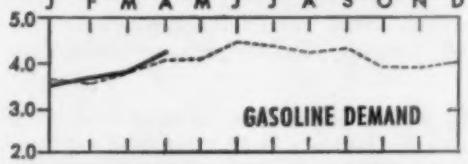
Fingertip Figures



Figures for period ended May 27, except as noted

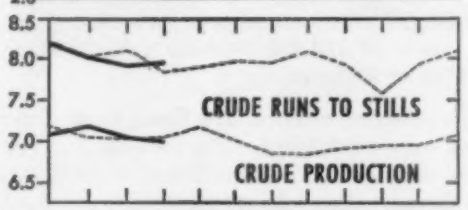
TOTAL DEMAND

Latest 4-week average	*
Year ago	8.902



GASOLINE DEMAND

Latest 4-week average	*
Year ago	4.246

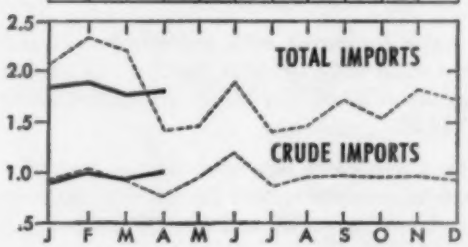


RUNS TO STILLS

Latest week	*
Previous week	7.935
Year ago	7.888

CRUDE PRODUCTION

Latest week	*
Previous week	6.864
Year ago	7.203

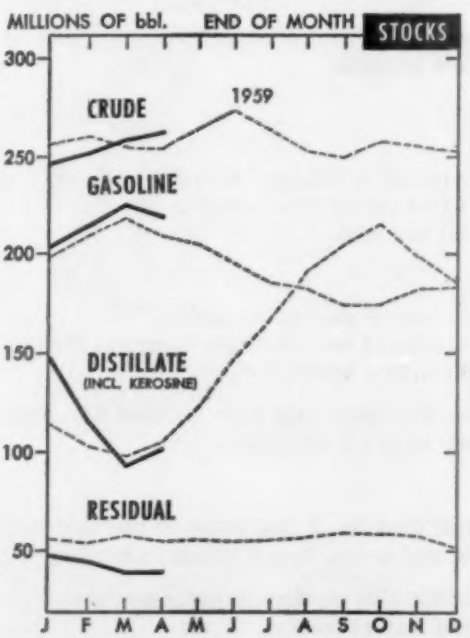


TOTAL IMPORTS

Latest week	*
Previous week	1.723
Year ago	1.357

CRUDE IMPORTS

Latest week	*
Previous week	1.070
Year ago	.825



CRUDE STOCKS

Week ended May 21	260.5
Previous week	259.8
Year ago	262.3

GASOLINE

Latest week	*
Previous week	214.1
Year ago	203.1

DISTILLATES

Latest week	*
Previous week	110.9
Year ago	121.5

RESIDUAL

Latest week	*
Previous week	38.9
Year ago	54.7

Rotary rig activity in the U. S. and Canada—sluggish so far this year—is slowly inching its way up toward more normal levels.

During May, rigs actually making hole averaged 1,943, up 40 from the previous month.

West and West Central Texas accounted for most of the increase in May, with Wyoming and California also scoring moderate gains.

But U. S. operators have a long way to go to bring drilling up to last year's levels.

Currently, almost 15% fewer rigs are running throughout the U. S. than a year ago. The largest decrease in rig activity has occurred in Oklahoma—25.5%. Louisiana is a close second, with a drop of more than 18%. Texas' decrease is only slightly less.

On the other hand, rotary rig activity in Michigan is up 75% over 1959. And in Illinois, drilling operations are up 62%.

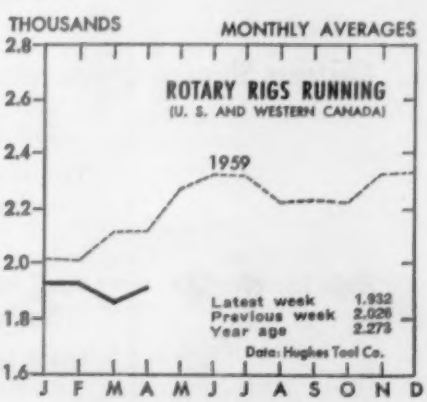
Despite the increased interest shown in offshore areas by the lease sales earlier this year, rig activity off the coast is not much ahead of 1959.

In the Gulf of Mexico off Louisiana, 54 rotary rigs are now running, compared with 51 a year ago. In the Texas offshore areas, one rig is running now while none were operating a year earlier.

In the Pacific Ocean, six rigs are operating off the California coast, compared with four last year.

* * * *

*Due to the Memorial Day holiday, most figures for the week ended May 27 were unavailable at press time.



The Market Trend

No. 6: The Supply is Tight, Price is Weak

"My bankers keep wondering why we sell the stuff so cheap." The comment came this week from an East Coast independent. The "stuff" the bankers were wondering about was heavy fuel.

And Chase Manhattan Bank of New York was one of the bankers wondering this week about the cheapness of heavy fuel. According to Chase, the weighted average price of natural gas and No. 6 oil at the point of consumption "is actually below the weighted average price of crude oil and natural gas at the wellhead."

City supply contracts turned up some fairly low No. 6 prices in bid openings last week. New York's requirement was by far the largest—6.3-million bbl., about equal to 60 cargoes. Philadelphia, Newark, and Los Angeles also opened bids on residual.

New York got the lowest No. 6 bids in the East. Adams Coal & Oil offered against housing and transit requirements at $2.255 a bbl., delivered in trucks. Boulevard Fuel quoted $2.272, also in trucks, to Newark's Board of Education. Petroleum Heat & Power offered 200,000 bbl. of No. 6, same delivery method, at $2.34 to the City of Philadelphia.

The current bids, in an import-control climate, are lower than those of a year ago—before the barriers were established. Less than 60% of the nation's 1.5-million b/d of residual demand now is supplied from domestic refineries. The balance must seep through the quota mesh.

And the bids look very low when compared with prevailing spot and contract prices. Spot, No. 6 is hard to find at $2.10, f.o.b. the Gulf. California residual, landed in New York, runs about $2.50. Caribbean bunker oil (with a quota tagged on it) costs about $2.30.

The paradox for fuel oil is that you can't buy spot cargoes north of Hatteras at the price paid by the final consumer. And the price to the consumer includes throughput costs, trucking costs, and sometimes barging costs, too.

The supply is tight, but the price is weak. Somewhere in the law of supply and demand there must be a loophole.

Venezuelan Crude:

A big deal is brewing. A Canadian refiner is looking for 20,000 to 40,000 b/d of crude in Venezuela over a 20-year period. The rumor is one of the new "independent" producers copped the sale.

Distress Ships:

The riskiest statement to make is that tanker rates can't go much lower. Last week, two vessels were chartered to run crude from the Persian Gulf to California at what ought to be a record low.

The rate was USMC—80%. Remember when rates were 15 times that high, during Suez? At that time they were USMC+200%.

Rise for No. 2?

Some refiners and some buyers fear that No. 2 fuel prices at the Gulf may rise soon. Heating oil is 8¢ now, and firmer than it's been in months.

But if Texas goes to 9 days' production this summer, as some people now are guessing, No. 2 fuel could ease off before fall.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of May 27

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....11.75-12.75
- Gasoline, 92 oct reg....10.75-11.5
- Kerosine....9-10
- Heating oil, No. 2....8-9
- Gas oil, 48-52 d.i....8.25-8.875
- Fuel oil, bunker "C"....$2.10-2.25

Caribbean, cargoes
- Avgas, Grade 100/130....14.75
- Gasoline, 93 oct research prem....11
- Gasoline, 87 oct research reg....10.125
- Gasoline, 80 oct research....9.375
- Gasoline, 70-72 oct motor method....9.25
- Kerosine....9.25
- Heating oil, No. 2....8
- Gas oil, 48-52 d.i....8.25
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- Kerosine....9.8-10.3
- Heating oil, No. 2....8.8-9.3
- Fuel oil, No. 6....$2.47

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg....10.5-11.25
- Kerosine....9.125-9.625
- Heating oil, No. 2....7.75-8.25
- Fuel oil, No. 6....$1.50-1.70

Chicago, bulk
- Gasoline, 91 oct reg....11-11.5
- Heating oil, No. 2....8.5-10.35
- Fuel oil, No. 6 high sulfur....7.4

Los Angeles, rack
- **Gasoline, 88 oct reg....11.4↓-12.65**
- Diesel fuel, PS 200....7.75-11.25
- Light fuel, PS 300....$2.80
- Heavy fuel, PS 400....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....3.5-4
- Propane, Baton Rouge....4.625-4.875

Pennsylvania Lubes
- Bright stock, 25 p.t....24
- 200 vis. neutral, 25 p.t....27

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....26-27
- Neutral, solvent, 200-210 vis....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....26
- Neutral, solvent, 200 vis....23

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130....15.875
- Gasoline, 79 oct research....9.75
- Kerosine....10.125
- Gas oil, 48 d.i. minimum....9.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9....$2.62-2.97
- North Dakota, 36.0-36.9....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N.M., inter., 36.0-36.9....2.93
  - West Texas, N.M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.05-3.25
  - Mirando, 28.0-28.9....2.96-3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....4.70
- California, Signal Hill, 21.0-21.9....2.32†
- North Louisiana-Arkansas, 36.0-36.9....2.72-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.)....$2.38
- Leduc-Woodbend (Alta.)....2.53
- Redwater (Alta.)....2.42
- Steelman A (Sask.)....2.44
- Virden (Man.)....2.30

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat La Salina....1.85
- Tarra, 38.0-38.9, San Lorenzo....2.83
- Lagunillas Heavy, flat, La Salina....2.07

†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.90
- Safaniya, 27.0-27.9, Ras Tanura....1.50
- Iran, 34.0-34.9, Bandar Mashur....1.86
- Iran, 34.0-34.9, Abadan....1.81
- Iraq, 35.0-35.9, Fao....1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.67
- Qatar, 41.0-41.9, Umm Said....2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud....1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud....1.38

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon....$2.27
- Iraq, 36.0-36.9, Tripoli, Banias....2.31

Far East, Cargoes FOB Lutong, Sarawak
- Seria Light, flat....$2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

U.S. Gulf-New York, clean..(USMC—15%) $2.42↑
U.S. Gulf-New York, dirty..(USMC—20%) $2.28↓
NWI-USNH, dirty....(USMC—60%) $1.10
NWI-UK/Cont., dirty....(Scale—57½%) 13/11*
Persian Gulf-UK/Cont., dirty....(Scale—67½%) 22/2*
Persian Gulf-USNH, dirty....(USMC—75%) $3.18

**Sterling*

Cuba Uses Soviet Oil for New Squeeze

HAVANA—Cuba's government is closing in on the refining and marketing business of the international majors in Cuba—to make way for its own Soviet oil imports.

Private oil companies have already been virtually frozen out of exploration by the Castro government. Now it's starting a squeeze on private refiners and marketers, with Soviet crude and products that recently started coming in under a $100-million trade pact.

The government has just launched state marketing of Soviet products (PW—May20'60,p56). But the volume of crude it expects to import apparently far exceeds the capacity of the one small refinery it now controls —a 2,300 b/d plant at Cabaiguan. And that's where Cuba's three principal refiners—with about 82,000 b/d capacity come in.

The government now wants Esso, Shell, and Texaco each to refine about 10,000 b/d of Soviet crude in their own Cuban plants, according to industry sources, which emphasized that talks were still "nebulous," with no definite terms reached as of last weekend.

The 30,000 b/d total would meet half of Cuba's 60,000 b/d domestic demand. (Press reports from Havana, however, put the government's request lower—at about 6,000 b/d for each company, for a total of one-third of demand.)

The Russian crude would partially displace the refiners' imports of dollar oil—largely from Venezuela. It would account for as much as one-third to one-half of each company's Cuban refining capacity.

The proportion would be highest for Texaco's Santiago de Cuba plant, which last year processed 22,500 b/d, well over its 20,000 b/d rated capacity. Shell's Havana refinery has a capacity of 27,000 b/d, and Esso's Belot plant 34,500 b/d.

In part, at least, the move appears to be a government effort to reduce its growing dollar debt to the oil companies. This has now reached $60-million, since the refiners have not been able to convert their peso receipts to pay for dollar crude imports.

In another move to reduce this debt, the government has agreed to release dollar exchange with a 90-day lag, for current crude purchases.

To widen the opening for its own new marketing operations, the government also last week canceled by law virtually all exclusive-supply contracts of oil companies with distributors, or direct with consumers, of gasoline, fuel oil, gas oil, and kerosine.

The stated aim of this new decree is to permit the distributors to acquire products from "other suppliers." This obviously means the government, whose own outlets for its Soviet products up till now have been limited to two small service station chains.

One exception in the new law: Contracts are not voided in cases where the dealers are indebted to suppliers.

The decree specifies that such contracts will be continued in effect—though only until the indebtedness is paid off on both principal and interest.

Esso, Shell, and Texaco will be most affected by the law. The three, plus Sinclair, have about 2,500 outlets throughout Cuba that could thus be at least partly lost to the government and its Russian supplies.

Signal Moves into Europe Market

Signal Oil & Gas Co. is taking a full plunge into marketing in Europe.

For the past several months, the Los Angeles firm has been marketing crude and products in Europe through an agent. Now it has taken steps to do its own marketing.

It has now set up Signal Europe, based in Paris, to market throughout that continent.

Primarily, the new, wholly owned subsidiary will market Signal's own products. But in cases of shortages, company officials said, it would also market products from other suppliers.

President of the new subsidiary is Claude Geismar, formerly European representative of American Independent Oil Co., of which Signal is part owner.

Signal currently has foreign production interests in Venezuela, Iran, and the Neutral Zone.

Its share of output in these areas totaled about 42,500 b/d at the end of 1959. It also has a stake in production in Argentina, where output is turned over to the state oil agency for cash payment.

In addition, Signal has exploration interests in Guatemala, Bolivia, and Canada.

Argentina May Be Opening Wider

Capital-short Argentina may be mapping a broader role for private oil firms in its state-controlled oil industry—in various sectors of the business, not just exploration and production alone.

This was the reaction of industry sources to reports from Buenos Aires last week that the Argentine government is preparing to announce major new capital investments by private oil firms, which would be allowed some new degree of control over oil produced.

The reports are regarded as a trial balloon for this latest evolution in Argentina's break with virtually complete state ownership and control of oil.

The reason for the move: difficulty in meeting the state oil agency's present big cash commitment to the U. S. and other foreign firms that hold oil development and drilling contracts.

One reported possibility is an expansion of the new concession-type contracts granted in 1958 to Esso and Shell, both long established in Argentina as integrated enterprises.

Company sources would neither confirm nor deny the reports last week but pointed out that the contracts provide for periodic review of the situation in Argentina, with negotiations on any changes.

Argentina is also reported lining up new foreign capital to finance cash payments on its major drilling contracts in the Comodoro Rivadavia area. These are held by Southeastern Drilling Co., Kerr-McGee Oil Industries, Inc., and Italy's state-owned ENI group.

Gulf Leads in Spanish Sahara

Gulf Oil seems likely to edge out Union Oil of California to be the first company to spud a wildcat in the desert sands of the Spanish Sahara.

Gulf is expected to start work on its first wildcat shortly after the middle of July.

Union, which had previously announced that it expected to be the first American firm to spud a hole in the West African territory, now reports it will start drilling "by Oct. 1."

Union's rig is still in France, but is expected to be shipped to the African coast soon. The company has a seismic study under way in the Spanish Sahara at present.

The Gulf wildcat will be drilled on one of the company's two southern blocks, either 47 or 51 (map), which are held jointly with Cepsa, Spanish independent.

The Gulf-Cepsa partnership also has rights on three blocks in the north, Nos. 9, 10, and 16, and has entered revised bids on Block 3 in the north, and Blocks 65, 66, and 97 in the south.

The rig for the Gulf project is now being assembled in Houston for shipment June 25. It is expected to arrive in Africa 12 to 15 days later.

Falcon-Seaboard Drilling Co., of Tulsa, has been awarded the 18-month drilling contract, starting when the rig is shipped.

The rig is a Continental-Emsco GB250 with drawworks and rotary powered by twin GM671 diesels with common power takeoff.

Since air drilling will be used as much as possible in the water-poor country, the rig is equipped with four WEK Gardner-Denver compressors.

The Spanish Sahara has no adequate port facilities, so Gulf will use Navy-type landing boats to put equipment ashore.

Two alternative shipping plans are being studied for the Gulf rig.

Under the first, the machinery would be shipped by freighter to Las Palmas, Canary Islands, 175 mi. offshore from the Gulf acreage. There it would be loaded on LSTs or LSMs.

An alternative being studied is shipment direct from Houston to Spanish Sahara via LSMs.

Another Spanish Sahara operator, Richfield, is already using landing craft to put gravimetric equipment ashore in an operation costing $100,000.

Richfield, operator for a partnership that includes Cities Service and Campsa, Spanish government oil marketing monopoly, transported $250,000 worth of geophysical equipment from Houston by LSM.

Amerada, Conoco, Ohio Oil Form New Libya Firm

A new company to handle future exploration, development, and transportation in Libya has been organized by Amerada Petroleum, Continental Oil, and Ohio Oil.

The new firm, chartered in Delaware, is known as Oasis Oil Co. of Libya, Inc. It will be registered in Libya.

The principal office of the new Oasis company will be located in Tripoli, Libya, and its administrative personnel assigned there.

The new firm will not handle refining or marketing for the three American companies.

(A report in the May 20 issue of PETROLEUM WEEK erroneously quoted Paul L. Henderson, vice-president of Ohio Oil, as saying the three firms had group marketing plans for Libyan crude.)

Amerada, Continental, and Ohio are each individually responsible for marketing arrangements for their respective shares of oil produced on the Libyan acreage.

Simultaneously, Ohio Oil announced a change in the name of the present Oasis Oil Co. of Libya, operator since 1956 of the three companies' interests, to Ohio Oil International of Libya, Inc.

Ohio Oil International, like its predecessor, a wholly owned subsidiary of Ohio Oil, will retain its present officers, and will continue to hold title to the parent company's one-third interest in 62-million acres of Libyan concessions.

Amerada and Continental hold title to their one-third interests in concessions through Amerada Petroleum Corp. of Libya and Continental Oil Co. of Libya, respectively.

The reorganization plan has received tacit approval of Libyan officials, since it fulfills the Libyan government's desire for more direct management in Libya, the companies said.

When the three American firms became associated in Libya, they made provisions for the present reorganization if operations were successful.

T. A. Van Griethuysen has been elected president of the new Oasis Oil. R. E. McMillen is executive vice-president, and Ralph Williams, vice-president in charge of the New York office.

What's New / AROUND THE WORLD

MEXICO—The first real profit in the history of Mexico's nationalized oil industry was realized in 1959. It amounted to $3.2-million, compared with a $17.2-million deficit in 1958, according to Pemex's second published balance sheet, issued last week.

Price increases, better sales, and cost cuts accounted for the improvement, Pemex said. It also reported exports of $18-million worth of products (mostly Bunker C fuel) and imports of $20-million worth of products (mostly via Lower California).

•

SPAIN—Shell has entered into competition with Esso for permission to build a petrochemical plant in Spain (PW—May20'60,p56).

Shell proposes a $55-million plant, in which it will have a controlling 65% interest. Spanish capital will hold the rest.

•

INDIA—The government has decided to build a 20,000 b/d refinery at Madras, in southeastern India, to operate on imported crude. The unit would be the third state-owned plant. The first two, to operate on domestic crude, are being built in northeastern India with aid from Rumania and the Soviet Union.

•

LIBYA—Atlantic Refining has entered the Libyan oil play, filing applications for four offshore concessions. The applications cover some 10,500 sq. mi. in the Gulf of Sirte, between Misurata and Benghazi.

•

UNITED KINGDOM—Ultramar Co. Ltd. plans to raise $9.1-million of new financing for its expansion in the Western Hemisphere. It recently bought out Golden Eagle Refining Co., of Los Angeles, and plans a refinery in Newfoundland. It is also still "actively considering" a 60,000 b/d refinery in Panama and expansion of Golden Eagle's present plant.

•

JAPAN—One of Japan's smaller independents is the latest reported negotiating to import Soviet crude. The firm, Toa Oil Co., has a 12,000 b/d refinery at Kawasaki, and less than 2½% of Japan's foreign exchange allocation for crude imports.

•

BRAZIL—The state oil development monopoly reported a 76% jump in net profits last year to a record high of about $53.2-million.

Petrobras' crude output averaged 64,622 b/d—including 29,700 b/d of waxy crude that was exported because it can't be handled in Brazilian refineries—compared with Brazil's 1959 consumption of 225,000 b/d. It drilled a record 227 wells, compared with 139 in 1958, boosting recoverable reserves nearly 44% to 600-million bbl. at year's end.

•

UNITED KINGDOM—An independent marketer with expansion plans has started selling European gasoline here at 7¢ per gal. off current retail prices of Britain's major marketers.

The firm, Jet Petroleum Co., Ltd., says it has 35 to 40 outlets, and plans to increase these to at least 100. It's getting the gasoline from Holland, West Germany, and Italy.

•

AUSTRALIA—Landa Oil Co., Dallas, will soon begin geological mapping of some 6.4-million acres of new concessions it was granted in southeastern Australia.

•

BOLIVIA — Western Hemisphere Petroleum Corp., Tulsa, is negotiating with a U. S. major that may take over its 1/3 interest in two concessions totaling 2.2-million acres in Zones 1 and 2. The Tulsa firm says it will have a free overriding royalty interest if the deal is made. White Eagle International Oil and Blackwell Oil & Gas each holds a ⅓ interest in the tracts.

•

VENEZUELA—Pan American International and Creole have given up more acreage—development tracts in eastern Venezuela. Pan American turned back 11,000 acres—about half of its South Monagas Block 11, acquired in 1957. Creole relinquished 241,000 acres of older, scattered concessions in Anzoategui and Guarico.

•

UNITED KINGDOM—British imports of Soviet lubricants and heavy oils more than doubled in the first four months of 1960, to a value of about $898,000, from $403,000 in the same period last year. Total imports of Soviet oil so far this year were worth $1.6-million.

•

EAST PAKISTAN—A 14,000-ft. test has been spudded at Lalmai as a joint venture of Shell and Pakistan Petroleum, a British-owned firm that drilled one 10,000-ft. wildcat there two years ago.

Two African Nations Give Oil Rights

New African oil rights have been granted to Italian, French, and U.S. firms in two countries.

Somip, jointly owned by the Italian government's ENI and the Moroccan government, got three permits in Morocco, at the northern edge of its Tarfaya permit, the first granted under Morocco's new 50-50 oil law.

Also in Morocco, BRPM, joint operation of the French and Moroccan governments, was given its first permit, for a tract along the Moroccan-Algerian border.

The American firms given rights are Cities Service and Continental Oil, which jointly won two adjoining concessions in Mauritania in partnerships with French firms.

In the northern tract, measuring 9.5-million acres, the French government-controlled Petropar holds a 51% interest, Continental 25%, and Cities Service 24%.

In the southern tract, measuring 7.3-million acres, the French partners are the government-controlled SAP, with 26%, and Eurafrep, with 25%. Continental and Cities Service hold 24% and 25%, respectively.

DEPT/Personals

L. H. TRUE, president of Magnolia Pipe Line Co., Dallas, is a new director of Wyco Pipe Line Co., Denver. Magnolia is the common carrier affiliate of Socony Mobil Oil Co., which is part owner of Wyco.

M. J. van Loben Sels

L. H. True

M. J. VAN LOBEN SELS has been elected president of Buttes Gas & Oil Co., Oakland, Calif. He has been a Buttes director for the past year, and maintains a consulting service in civil engineering at Redwood City, Calif. He has also been associated with Standard Oil Co. of California. In his new position, van Loben Sels replaces **O. G. Green,** who is retiring. At the same time, **Morton H. Gleason,** a Buttes director since 1943, was elected vice-president. **Jeff Watts** has been promoted to general manager and chief engineer. He joined the company last year as assistant general manager.

GORDON H. WHITE is the new manager of exploration for the United States and Canada for Sohio Petroleum Co.'s reorganized exploration department. White, who will be located in Oklahoma City, reports to **R. W. Edmund,** general manager for exploration. **John T. Cooke** continues as foreign operations manager in the department, and **L. F. Elkins** as research manager. Edmund's staff also includes **J. Walter Johnson,** senior exploitation geologist; **Dr. A. C. Munyan,** senior exploration geologist; and **Paul M. Miller,** chief staff assistant, finance and budget. Three new exploration managers, reporting to White, are: **Dwight S. Seely,** for the Gulf Coast, with offices at Houston; **Brame Womack,** for the Mid-Continent and Rocky Mountains, with offices in Oklahoma City; and **William C. MacQuown,** for Canada, at Calgary. **H. R. Adams,** staff assistant, will work in coordination with McQuown; **C. C. Sellers** with Seely; and **H. D. Fox** with Womack. The three staff assistants will be located at Sohio headquarters in Oklahoma City. **Charles H. Burke,** land manager, will coordinate all land functions. **C. C. Irby** is the new assistant general manager in Sohio's reorganized production department, reporting to **Frank H. Willibrand,** general manager. Field operations in that department are under the supervision of **Joseph H. Field,** general superintendent, north area, and **Burton W. Whiteley,** general superintendent, south area. Field and Whiteley will have offices in Oklahoma City. **E. E. Young** continues as chief engineer, and **A. E. Hall** is assistant chief engineer. **Vernon E. Holmes** is staff assistant to Field, and **Roy C. Gould** is staff assistant to Whiteley. **Howard B. Shelton** has been appointed gas-gasoline division manager, and **Franklin A. Black** is employee and public relations manager for both departments. Both men report to Willibrand. **James E. Owens** is staff assistant to Willibrand, and **Charles W. Karcher** is economic research analyst.

GARRY OWEN, vice-president of Arabian American Oil Co., has been elected a director. Owen, who has been with Aramco since 1941, is located in Washington, D. C., where he is in charge of government relations affairs for Aramco in the United States. Owen was formerly with Standard Oil Co. of California.

G. Owen

T. M. Welch

THOMAS M. WELCH is head of Humble Oil & Refining Co.'s newly created plans division, which will handle benefit-plan development. Welch was formerly manager of the plan development and social security division of Esso Standard Oil Co., which became a part of the new Humble company in January. He has transferred from New York to Houston.

D. CARLTON JONES has been elected vice-president of Hudson's Bay Oil & Gas Co., Ltd., Calgary. Jones is general manager of the company's production department. **James R. Murray,** Winnipeg, and **Milton Joseph Foley,** Vancouver, were elected directors. Murray is managing director of Hudson's Bay Co., and Foley is president of MacMillan, Bloedel & Powell River, Ltd. The two new directors replace **P. A. Chester** and **Joseph Harris,** who are retiring.

E. C. SINGELYN has been elected vice-president of Aramco Overseas Co., with headquarters at The Hague. He was formerly assistant comptroller of Arabian American Oil Co., in Dhahran, Saudi Arabia. He will report to The Hague on Oct. 1, after a long vacation.

J. W. GREEN is the new vice-president in charge of domestic sales for Texaco Inc., New York, succeeding **I. G. MORGAN,** who transfers to Los Angeles as vice-president and assistant to **James T. Wood, Jr.,** senior vice-president on the West Coast. Green, who joined Texaco in 1935, became northern regional sales manager at New York in 1958, and assistant general sales manager of the domestic sales department in 1959. Morgan joined the company in 1931. He was appointed assistant general sales manager of the Pacific Coast region in 1953, and general manager of the sales department in Los Angeles in 1959. He was elected vice-president earlier this year.

N. J. HAASE has joined Atlantic Refining Co., Philadelphia, as director of marketing research. Haase has been associated with Ford Motor Co., in Detroit, as manager of the product planning, market analysis, and product research groups. He also served with Ford International in Germany, and was most recently an international marketing consultant promoting international trade. From 1952 to 1956, Haase served in Berlin as executive vice-president of the American Chamber of Commerce for Western Europe.

W. R. STOTT, vice-president of Standard Oil Co. (N.J.), New York, and **HERBERT WILLETTS,** president of Mobil Oil Co., New York, are new directors of the American Petroleum Institute. **Morgan J. Davis,** president of Humble Oil & Refining Co., Houston, was elected to API's executive committee. He has been a board member since 1957. Stott replaces **Eugene Holman,** who recently retired as chairman of Jersey's board. Willetts, who is also a vice-president of Socony Mobil Oil Co., replaces **R. L. Minckler,** who is retiring as senior vice-president for Mobil in Los Angeles.

C. G. Drescher

L. W. Leath

LOUIS W. LEATH, formerly vice-president Sinclair Oil Corp., is the new president of Sinclair & BP Sales, Inc., succeeding **CARL G. DRESCHER,** who is returning to Sinclair as a vice-president. Drescher has been president of the joint Sinclair BP marketing organization since it was formed in March, 1959.

D. J. EWING becomes district geologist and supervisor-in-charge of the Bismarck (N.D.) district office in the exploration department of Pan American Petroleum Corp.'s Rocky Mountain division. He replaces **B. G. Newton,** who has transferred to the Casper (Wyo.) division geological department as staff geologist. **E. E. Heiser** has been named district geologist in the exploration department's Casper district office, succeeding Ewing. Heiser has been area geologist in the Casper district since 1956.

ADVERTISERS IN THIS ISSUE

Cameron Iron Works, Inc.	8
Chicago Bridge & Iron Co.	48-49
DeLaval Steam Turbine Co.	29-32
Dowell	Cover 2
DuPont, Petrol Chem. Div.	14
Eastman Chem. Prods, Inc.	11
Electro-Motive Div. G.M.C.	37
Ethyl Corp.	12-13
First City Nat'l Bank of Houston	2
Goodyear Tire & Rubber Co.	1
Halliburton Oil Well Cementing Co.	23
Harbison-Fischer Mfg. Co.	38
Houdry Process Corp.	46
Kellogg Co., M. W.	Cover 4
Lone Star Steel Corp.	6-7
Martin Mfgr., John N.	36
Mission Mfg. Co.	24
Nordstrom Valve Div., Rockwell Mfg. Co.	28
Penrod Drilling Co.	39
Price Co., H. C.	21
Republic National Bank of Dallas	20
Smith Corp. A. O., Smith-Erie Div.	5
Southwest Industries, Inc.	Cover 2
Trailmobile Inc.	26-27
Universal Oil Products	44-45

Classified Advertising
F. J. Eberle, Business Mgr.

Business Opportunities	59
Employment Opportunities	59
Equipment	
Used or Surplus New For Sale	59
Wanted	59

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DEPT/Service & Equipment Companies

MARVIN H. GROVE has been named chairman of the executive committee, and has been appointed to the newly created position of chief executive officer, of Walworth Co., New York. He is also president of Walworth's subsidiary, Grove Valve & Regulator Co., Oakland, Calif.

M. H. Grove

S. A. Shuman

SIDNEY A. SHUMAN assumes the new position of assistant to the president of National Supply Co., Pittsburgh. He was formerly general manager of Fluid Packed Pump Co., Los Nietos, Calif., a division of National Supply. Shuman was executive vice-president of Fluid Packed Pump from 1953 until National Supply purchased that company in 1959.

W. A. LAUKAITIS is the new eastern regional marketing manager for Southwestern Industrial Electronics Co., Houston, one of the Dresser Industries. He was formerly manager of W. L. Maxson Corp.'s Washington (D.C.) office, with responsibilities for counter-measure systems, radar systems, and data processing.

JOHN D. TRILSCH, Trilsch Corp., Houston, has been elected president of the Petroleum Electric Supply Assn. **C. A. Gunn,** Copperweld Sales Co., Chicago, is the new vice-president, and **Marvin Gunter,** Motorola C&E, Houston, is executive secretary.

JOHN F. BOGNER becomes manager of the electronic department of Engineering Supply Co., distribution subsidiary of Texas Instruments Inc., with offices and warehouses in Dallas and Tulsa. Bogner has been an electronic component salesman for Esco for the past five years.

PAUL V. HODGE heads a new department for marine operations for Geophysical Service Inc., subsidiary of Texas Instruments Inc. Marine operations, with headquarters in London, will be concerned with GSI's single-ship marine seismic exploration, including the exploration vessels Sonic and Texin. Hodge, who has been with GSI since 1945, was most recently responsible for outfitting the Texin in his position as equipment manager. **Jack V. McManus,** who has been GSI's chief field service engineer since 1955, becomes equipment manager, with offices in Dallas. **S. L. Sackery,** in the field service department since 1951, succeeds McManus. **Carl O. Jackson** becomes mechanical equipment supervisor in Dallas. He has been associated with GSI's Canadian operations in Calgary since 1947. **Richard D. Warrington** transfers from Texas Instruments to GSI as manager of accounting. He was formerly chief internal auditor for TI's central staff. **James O. Cook,** with GSI for the past four years, is the new supervisor of general ledger accounting, and **R. H. Graham** is purchasing agent. **L. C. Craig,** with the company for 24 years, succeeds Graham as materials control supervisor.

CHARLES M. BRINCKERHOFF has been elected a director of ACF Industries, Inc., New York. Brinckerhoff is president of Anaconda Co., and a director of the First National City Bank of New York and of several Anaconda subsidiaries, including American Brass Co. and Anaconda Wire & Cable Co.

V. C. MICKLE has rejoined George E. Failing Co., Enid, Okla., as a member of its sales staff. From 1947 to 1957, Mickle was manager of Failing's water well division.

FRED A. BROCK is the new manager of the geophysical products branch in the instrumentation product group of Texas Instruments Inc., Houston, and **Donald P. Venker** is the new customer requirements manager in that branch. Brock and Venker have been with TI's oil exploration subsidiary, Geophysical Service Inc., and have been engaged in the design and development of seismic instrumentation. Brock was chief research engineer for GSI before his new assignment. Venker, who returned to St. Louis University for postgraduate studies after several years as a computer and party chief with GSI, has been with TI in Houston since 1957.

B. H. Loftin

R. F. Weston, Jr.

RAY F. WESTON, JR., has been elected secretary-treasurer and a director of F. H. Maloney Co., Houston, and **B. HUNTER LOFTIN** a director. **William B. Campbell** moves up from technical services director for Maloney to vice-president, technical services. Weston, with the company for the past five years, was most recently office manager. Loftin, a partner in the law firm of Butler, Binion, Rice & Cook, has been Maloney's general counsel for the past nine years. Campbell joined the company in 1957 as advertising manager. His duties were expanded to include the direction of special services related to the development and marketing of new products.

JAMES H. BEWS has been named manager of the San Francisco branch office of Clark Bros. Co., one of the Dresser Industries. He has been a sales engineer at Clark's Los Angeles district office. In his new position, Bews will be responsible for the sale of Clark engines, compressors, and gas turbines in the San Francisco and Pacific Northwest areas. **Hugh R. Lafferty** succeeds Bews as sales engineer in Los Angeles. Lafferty, with Clark since 1956, was most recently application engineer in Los Angeles.

J. H. Bews

E. S. Turner

E. S. (Bud) TURNER is the new northwest regional marketing manager for Southwestern Industrial Electronics Co., one of the Dresser Industries, with offices in Colorado Springs, Colorado. Before joining SIE, Turner was district manager of the Colorado Springs field office for Stromberg-Carlson Co.

FLOYD HENTSCHEL becomes Shreveport district manager of Delta Tank Mfg. Co.'s oilfield equipment division. The Shreveport office is responsible for sales and service in the Ark-La-Tex area. Hentschel has 24 years experience in the petroleum equipment field.

J. W. CROWNOVER, JR., is the new store manager at Worland, Wyo., for Jones & Laughlin Supply Division, and **R. J. Farley** succeeds him as store manager at Edmonton, Alta. Farley was formerly storeman-advanced for J&L at Edmonton.

R. J. HOWENSTINE is the new manager of the San Antonio (Tex.) oilfield equipment sales office, and **R. H. Huffman** is manager of the Shreveport (La.) sales office, for Delta Tank Mfg. Co. Both men have had previous experience in oilfield equipment sales.

GLEN H. DENISON has been named manager of the South Louisiana district of Garrett Oil Tools, division of U.S. Industries, Inc., with offices in Marrero. Denison, who has been with Garrett since 1951, was most recently manager of the South Texas district, at Houston. **J. W. Staples, Jr.**, who has been serving as Garrett's branch manager in Odessa, Tex., succeeds Denison in Houston. Recently appointed sales engineers and their new locations are: **Ted W. Link**, New Mexico district, Hobbs; **Jim McMichael**, South Louisiana district, Marrero; **Jon F. Hamlin**, Southwest Louisiana district, Lafayette; **Eddie Lofton**, Oklahoma district, Oklahoma City; **Gary L. Fuller**, sales and service engineer at Tioga, N.D., and **Larry Johnson**, lead sales engineer at Odessa, Tex. **John D. Millea** has been named special sales engineer for Garrett in Europe and the sterling area, with headquarters at the Hague. He will assist **C. M. Peters**, vice-president, sales engineering, in expanded sales activities in this area. Millea was formerly area manager for Servicios Petroleros S.A., in Peru.

CHARLES H. GROEZINGER, JR., has been appointed Midwestern regional manager of American Cyanamid Co.'s refinery chemicals department, with offices in Chicago. Groezinger joined the company in 1950 as a technical sales and service representative in the industrial chemicals division, and has held several positions in the division's refinery chemicals and process chemicals departments.

D. J. (Don) MACK is manager of new California operations recently set up in Bakersfield by the Dowell Division of Dow Chemical Co. **J. W. Clifford, Jr.**, is in charge of the Bakersfield office, and **J. B. Ritchie** is service and sales engineer. The three men were formerly located at Dowell's Rocky Mountain headquarters at Farmington, N. M.

CHARLES D. CRICKMER has been promoted to chief engineer of the Baash-Ross division of Joy Mfg. Co., Houston. He has been assistant chief engineer in charge of activities at the Houston plant. In his new position, Crickmer will supervise the design, research and development, and improvement of the Baash-Ross line of oil industry tools. Before joining Baash-Ross in 1959, Crickmer was associated with Mission Mfg. Co.

C. D. Crickmer

R. Noland

RAY NOLAND is the new western region service manager for Delta Tank Mfg. Co.'s oilfield equipment division, with offices in Houston, and **Clint B. Warren** is the new sales engineer for that region. Noland has been in sales and service of petroleum equipment in the Texas-Louisiana area for the past 15 years, and Warren was formerly division manager for another petroleum equipment manufacturer. **E. A. Beyer** has been appointed sales representative for the oilfield equipment division at the Lafayette (La.) district office. He has been in oil equipment sales since 1957. **Jo E. Martin** is the new oilfield equipment sales representative at the Hobbs (N. M.) branch. Martin, with Delta since February, has been engaged in sales and service of oilfield equipment in Hobbs and the Midland-Odessa area for several years.

K. RUSSELL KNOBLAUCH has been appointed market sales manager for Minneapolis-Honeywell Regulator Co.'s industrial products group, in Philadelphia. He will be in charge of managers for nearly a dozen markets where products from the group are sold. Knoblauch, with Minneapolis-Honeywell for the past 36 years, has been industrial manager for its Mid-Atlantic region, assistant general sales manager of the Brown Instruments division, and sales manager for the valve division. He was most recently chemical industry market manager. The industrial products group consists of the Brown Instruments, Rubicon, valve, industrial systems, Heiland, and Fall River (Mass.) divisions.

VAL L. FORSYTH has been appointed vice-president of Udell, Inc., Houston. He was most recently vice-president and manager of the heavy manufacturing division of Southwestern Industrial Electronics Co., one of the Dresser Industries. He has also been associated with Lane-Wells Co., another of the Dresser Industries, serving as manager of manufacturing and engineering, technical assistant to the president, and chief engineer. **J. M. Jackson** becomes a sales engineer for Udell, with offices in Houston. For the past two years he has been a design engineer with Dresser Industries, Inc. He also has been a sales engineer for Black, Sivalls & Bryson, Inc., and has operated his own business designing and building rigs, and drilling wells.

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Can't We Whistle While We Work?

THE TROUBLES that the oil industry has right now are generating queasy feelings in many quarters. The ills of oversupply and overindulgence are serious; there's no use kidding about that. But there's little likelihood that they'll be fatal.

The situation that the oil industry is in now is somewhat comparable to the little boy who ignored warnings and advice, and stuffed his fat little face with candy, cookies, and ice cream cones with reckless abandon. Now his tummy is sore and swollen, and he's suffering the pangs and pains of overindulgence—and, hopefully, a wee bit of conscience.

He's sick, but not sick enough to alert the mortician.

For this reason, and this reason alone, the oil industry will have to be extra cautious about the kind of face it presents to the press, the public, and the financial world, lest the reports from the sick room make it appear that the situation is worse than it really is.

Sure, it's tough to be optimistic when your tummy hurts, or when the prognosis for a speedy recovery isn't promising. But common sense calls for an attitude that'll help ease or dispel the gloom, rather than compound it.

This is not to be interpreted as a suggestion that oil men and oil companies ignore the basic problems in the hope that they'll go away. Or that a lighthearted attitude will cure everything. Or that anyone approves of the excesses that caused the trouble in the first place. That would be sheer nonsense.

WHAT WE ARE TRYING TO GET ACROSS is the idea that gloom-spreading will only make the picture darker, and make everyone more apprehensive instead of hopeful. The oil industry has seen tougher times: It isn't hard to recall the $1-per-bbl.—and lower—crude of the depression-ridden thirties, and the problems and discouragement that beset the industry then. And it recovered nicely, and went on to greater things.

Many top executives in the industry are worried not only about the problems of their companies, but also about the "face" that the industry is wearing. Reflections of the gloom already are appearing in the general and specialized press. And if they keep on, the industry could talk itself into more troubles than it now has.

IT ISN'T TOO LATE for everyone in the industry to buckle down to the job of curing our ailments. And we can do it, too, with good management. But while we're doing it, isn't it better to "whistle while we work" than to moan sad and low?

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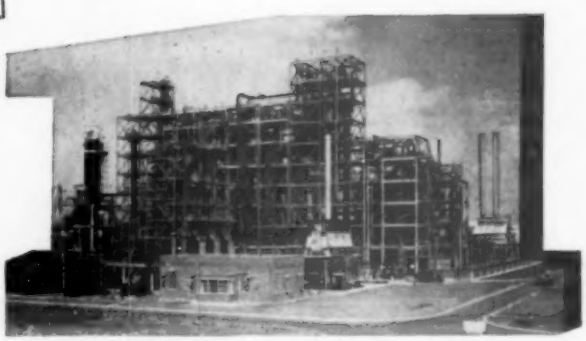
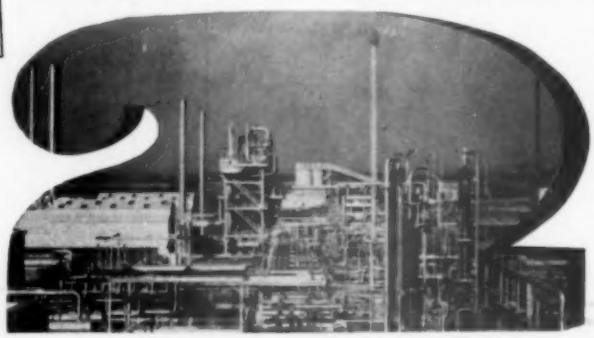
1951



Recent completion of Imperial Chemical Industries' third olefin plant at Wilton, England, has made these Works the largest petrochemical venture outside the United States. With a current output of 110,000 tons per year of high-purity ethylene, and a potential output of 140,000 tons, I.C.I. Wilton is an outstanding example of engineering cooperation.

1956



The first plant was commissioned in 1951, and was the first full-scale adoption of the then novel process of oil pyrolysis developed in the Kellogg Laboratories. Its success led to the addition of No. 2 plant in 1956, and then to this latest extension, representing a 60% increase in olefin capacity, in 1959.

1959

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